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SUPERIORITY OF VAGINAL ROUTE OVER ABDOMINAL INCISION IN SURGICAL TREATMENT OF PELVIC DISEASE IN WOMEN*.

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In the somewhat heated discussions that have been held from time to time on the abdominal versus the vaginal incision, there have not been wanting most ardent advocates of the abdominal route. I think I am safe in saying, however, that among the latter there cannot be found one who denies that if equally thorough, complete, and satisfactory work can be done *per vaginam*, it is the preferable route of attack. The reasons for this are obvious: Throwing out of account entirely the old apprehension and fear of sepsis, which formerly attended a laparotomy, it is a serious thing for a woman to submit to an incision through her abdominal walls. To enumerate in detail the objections: The incision necessitates the placing of stitches which sooner or later must be removed and the fear of this ordeal fills the patient with dread. 2. The wound must be supported by adhesive plasters which are most uncomfortable and annoying, and then the patient is bound up in an abdominal bandage. Later there presents the unsightly scar and, last and most important of all, there persists for months and years the ever-eminent danger of ventral hernia. Various devices for stitching the abdominal walls have been resorted to until scarcely two men in the whole country use identically the same method, and yet all must submit to the mortification of seeing or learning that a certain proportion of every series of cases is afflicted with hernia. On the other hand, the vaginal incision is devoid of after-pain, is free from the necessity of removing stitches, requires no adhesive plaster, leaves no scar, and has never been known to be followed by hernia; so that I say if the vaginal route affords facilities for as complete, thorough, and satisfactory work as the abdominal incision, the balance must swing in favor of its advocacy.

By "vaginal incision" is no longer implied a simple puncture or the making of a small opening, but a free incision throughout the entire length of the canal, supplemented by a transverse incision in front of the cervix and sometimes by a supplementary one posterior to the cervix. Through such incision a few persistent operators have been enabled to bring within the field of surgical treatment the entire range of pelvic disease. This treatment has not been fragmentary, nor preliminary to a later abdominal incision or treatment in some other way, but has effected complete and satisfactory cures along all lines demanding treatment.

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A few years ago Péan and Ségond of Paris and Jacobs of Brussels brought the vaginal method forward as the preferable route of attack in suppurative pelvic disease and in fibroid tumors of the uterus, but with them the operation meant an absolute sacrifice of all the internal genital organs; their patients were cured, but at too great a sacrifice, and in the reaction which followed, the vaginal method seemed destined to be relegated to a subordinate position. At this stage of events Mackenrodt and Wertheim of Germany, Byford of Chicago, and Vineberg and myself, in New York, began the extension of the vaginal method to simpler conditions such as retrodisplacements of the uterus, either with or without adhesions. Mackenrodt and Vineberg confined themselves more especially to the operation known as vaginal fixation for the relief of retrodisplacements. Wertheim, Byford, and myself promptly recognized the objections to that procedure and, quite independently of each other, instead of fastening the uterus itself, reached up on the broad ligaments, picked up the round ligaments in their upper border, lapped them on themselves, and stitched the folds together so as to shorten the round ligament and make it the determining factor in maintaining the position of the uterus. Dr. Byford, in addition to this, deems it wise to attach the peritoneum of the fundus to the peritoneum of the bladder near the symphysis, as an additional support. In this procedure, then, we have a most ideal treatment for the common lesion of retroposition of the uterus either with or without adhesions, for through the vaginal incision all adhesions, either to appendages or to the uterus, are easily broken up and the uterus placed in its proper position. The results as reported by all operators are most satisfactory, many of the patients becoming pregnant after operation, passing through their pregnancy with comfort and the uterus remaining in its normal position thereafter. This operation, then, comes in competition with two procedures commonly accepted as the correct ones for the treatment of displaced uteri, viz., abdominal fixation, suspensio uteri and the Alexander operation. Admitting that the results are equally good, which by the way I am not prepared to do, abdominal fixation—hysterorrhaphy or suspensio uteri—is immediately thrown out because it necessitates a laparotomy with all its attendant train of unfortunate consequences, and the Alexander operation also yields in comparison because of the many objections to it which are entirely obviated by the vaginal operation.

The objections to the Alexander operation are many. In the first place, it has only a very narrow field of application, for any uterus that is not absolutely movable contraindicates the employment of the Alexander operation, and the proportion of retroverted uteri that are non-adherent and free from complications in the appendages is extremely small. Moreover, the ligaments are not always to be found, and when found may break when subjected to the necessary strain. In addition to this, two unsightly scars are left on the abdominal wall,

and the danger not only of one hernia but of two is ever present. The danger of hernia after the Alexander operation is not to be passed over lightly. Careful investigation of the records at the Hospital for Ruptured and Crippled in New York City, when compared with series of cases of Alexander's operation reported by prominent operators, reveals the fact that a sufficiently large percentage of every operator's cases, in this operation, suffer eventually from hernia to really throw the operation into disrepute. In the shortening of the round ligaments through the vagina, the broad ligaments are always to be found, they are dealt with at the largest and strongest portion of their extent, there is no reason why the operation should ever fail, there is no scar, and there is no hernia. For the treatment, therefore, of the simple condition of retroversion, either with or without adhesions, the shortening of the round ligaments through the vagina is proving itself to be the operation par excellence.

But this anterior vaginal incision is lending itself to still further work. In breaking up adhesions that bind down the malplaced uterus and appendages, these organs are gradually and gently delivered into the vagina, where they can be thoroughly examined fully as satisfactorily and in some instances much more so than through the abdominal incision, and then treated in accordance with the most approved principles of conservative surgery. Under these circumstances, the appendages of one side are frequently removed because of hopeless disease, the ovary of the other side freed from its adhesions, its diseased portions resected, and, when necessary, the tube amputated before the round ligaments are shortened. In the application of such conservative work the skilful, conscientious gynecologist finds his highest mission, and for the fulfilment of it no incision offers such facility as that through the anterior vaginal fornix. Two of my cases which have been subjected to ablation of the appendages of one side, and to more or less conservative work on those of the other side have not only been relieved of their symptoms but have become pregnant and borne children.

But what of other and more serious conditions? What of large pelvic abscesses with plastic exudate and strong intestinal and omental adhesions? Can these be treated thoroughly, satisfactorily and, last but not least, with safety through the vaginal incision? Experience is daily proving that they can. In such conditions this operation lends itself as an exploratory measure for the purpose of determining to what degree the appendages are involved, and whether or not it is possible to save either the whole or a portion of the ovary. If the appendages of both sides are hopelessly destroyed, the operation at once becomes one of total hysterectomy and ablation of all the internal generative organs. In such a condition I have yet to meet a case that can not be dealt with to my entire satisfaction through the vagina.

Extended experience is making it possible to differentiate by sight and touch the different structures which must be dealt with under these circumstances and thus avoid injuring those which must be left behind. In such cases the intestines are occasionally injured by the best operators when the operation is done through the abdominal incision. It is certainly fair to allow the same latitude to the man who operates through the vagina. By patient, painstaking care there is no reason why in either the intestines should be injured except in those cases in which the intestinal wall has become degenerated to such a degree as to render it less resistant than the surrounding tissue. In separating adhesions under such conditions the bowel will at times become torn and demand suture; but my contention is that it should occur and does occur no oftener in the vaginal than in the abdominal operation. Indeed, I believe it is less frequent for the reason that in many instances the diseased tissue can be entirely removed from below without breaking through the vault of adhesions between the coils of intestines and omentum above, allowing the adventitious exudate and adhesions to melt away and disappear through drainage and absorption.

To recount cases illustrative of this work would be but to enumerate conditions with which all are familiar, my contention simply being that no matter how simple the condition with which we have to deal, or how complicated and difficult, every condition is more amenable to safe and satisfactory treatment per vagina than per abdomen. In this connection I could describe to you cases of ectopic gestation, cases of dermoid cyst of the ovary, cases of enormous bilateral abscess of the ovaries and tubes, small fibroids of the uterus that have been removed by myomectomy, leaving the uterus and appendages intact, large fibroids of the uterus, involving the whole organ, six, eight, and ten pounds, removed safely and satisfactorily *per vaginam*. Indeed, it is difficult to describe any condition in the female pelvis amenable to treatment by abdominal incision that cannot be dealt with *per vaginam*, saving the patient the abdominal incision, sparing her the nervous shock and wear and tear which comes from the surapubic work as contrasted with that from below, and shortening her convalescence by from one to three weeks. Indeed, I believe the time is coming, as the technic of this procedure becomes more and more familiar, when any man who proposes to do a laparotomy will be called on to give most cogent reasons why he advises the suprapubic incision instead of the infrapubic.

After these operations, even the most radical, patients suffer very little pain, they are allowed to take any position in bed that contributes to their comfort; they are free from the slightest irritation of the bladder—a fear that might suggest itself to many when contemplating the dissection of the bladder from the uterus; the convalescence is smooth, and many a woman goes through a combination of procedures on the internal generative organs without ever realizing, by any discomfort which occurs in her convalescence, that she has had anything more serious done than a simple trachelorraphy and perineorraphy. Indeed, I have had patients in my private sanitarium who, in an off-hand way, knowing that they were to be curetted and perhaps have a laceration of the cervix repaired, have said that they wanted me to do everything that I found necessary when they were under the anesthetic. In two such instances within the last three months, I have, unknown to the patient, opened the anterior fornix, in one case have resected part of one ovary and applied ignipuncture to the other and shortened the round ligaments without the patient ever realizing that anything more was done than a curetting of the uterus and repair of the perineum. In the second case I removed the appendages of the right side, applied ignipuncture to the ovary of the left side after separating firm and numerous adhesions, and shortened the round ligaments in addition to curetting the uterus and repairing the perineum, without the patient having sufficient symptoms to ever suspect that anything more was done than the sewing up of the perineum.

In conclusion, permit me to say that the simplicity of this method of operating, the facility it offers for either the most conservative or the most radical proced-

ures, the safety and comfort which it insures the patient, both immediate and remote, should commend it to every operator. Experience gives confidence, and facility will come with practice.

TECHNIQUE OF SURGERY OF THE UTERUS AND ADNEXAE PER VAGINAM.*

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When I gave the title of my paper I supposed that it would be read before this Section separately from other papers, but I am associated in the program with several other persons in a "symposium" intended to present all questions of practical significance in relation to the advantages of the infrapubic and the suprapubic methods in treating diseases of the uterus and its adnexæ. The popular belief that there is any antagonism between the scientific celiotomist and the vaginal hysterectomist is not justified by facts, for there are many cases that may be successfully treated by either method, and the preference that one surgeon may have for the vaginal route and another for the abdominal route, is often largely the result of experience. However, we may refer to some of the arguments against vaginal hysterectomy and the treatment of the uterine adnexæ, and show that there is no justification for these objections, if the operations are performed by surgeons who are theoretically and practically familiar with the correct technic in such work. My views in relation to what may be accomplished per vaginam have been modified within the last few years because of a change in the technic previously adopted. Until we learned the advantages, in vaginal surgery, on the uterus and adnexa, resulting from bisecting the uterus, we could not entirely controvert some of the arguments used to show the superiority of the abdominal route. It is even now claimed that the suprapubic route possesses an advantage over the infrapubic route, in that by the former we can see nearly all the diseased structures as we are separating adhesions of the intestines, but that we can not do so by the latter. This is no longer true after bisecting the uterus, which may be done with but little danger of wounding important structures, and then each half may be separately pulled outside the vulva, adhesions treated as they appear to the sight and the sense of touch, the diseased structures being seen more distinctly than by any other method. It is impossible to see all the adhesions by the abdominal route when they are extensive and deeply seated in the pelvis, and it matters not what precautions we take to shut off the intestines from the field of operation, the danger of wounding either the large or the small intestines in such cases is as great as by the vaginal method. I am judging of the relative advantages of these two methods from my experience in operating by both routes. I have never wounded an intestine nor a ureter in the performance of a vaginal hysterectomy, or in vaginal incision and the removal of diseased and adherent adnexæ; but I have been less fortunate in treating the same kind of cases by celiotomy. Nor is there any force in the argument against vaginal hysterectomy, or vaginal incision and removal of the ovaries and tubes, of the physicians who assert that we can not do successful work in so-called encysted peritonitis with the accumulation of pus in the pelvis shut off from the abdominal or peritoneal cavity by an over layer of adhered intestines. These are the cases in which the vaginal method is especially indicated, for we can, by incision and drainage, or by hysterectomy with, and in some cases without, the removal of the ovaries and tubes, symptomatically cure such patients to such an extent that we hear no further complaint of trouble in the pelvis or in the abdominal cavity. This is because of the conservatism of nature in systematically arranging the adherent bowels in the effort to protect the healthy peritoneum, and, if left undisturbed, they cause no trouble afterward and the adhesions are soon softened and can not be detected by a bimanual examination with a finger in the rectum or in the vagina. This has been proven by an abundance of experience, but the dangers in separating these adhesions in a celiotomy have likewise been abundantly demonstrated. While a large accumulation of pus in the pelvis may often be sterile, we never know when it is virulent, and then the danger of infection is great, because it is next to impossible to prevent soiling the peritoneum and causing septic infection. But granting that the pus is sterile and the adhesions are all separated without wounding an intestine, and the patient makes a prompt recovery from the operation, she is left in an incomparably more dangerous condition than she would have been had the operation been performed from below and the adhesions not disturbed. Post-operative complications in suprapubic incision so often arise in these cases that we can not believe it is possible for such extensive adhesions to be separated without the recurrence of irregular adhesions, more complicated and more dangerous than the adhesions systematically formed in Nature's effort to protect the life of the woman. The objection to vaginal hysterectomy because of the danger of encountering a diseased appendix which can not be removed from below, is not worthy of serious consideration, because if an appendix is sufficiently diseased to justify its removal, then the symptoms would attract attention to appendicitis and indicate the necessity for a celiotomy. But as other members will more thoroughly discuss the objections urged against vaginal hysterectomy and vaginal incision, etc., I will confine my remarks to a few minor points in the technic that enables the operator to overcome the difficulties more easily. No one can successfully controvert some of the arguments against vaginal hysterectomy unless he recognizes the necessity for and practices bisection of the uterus before separating the adhesions of the ovaries and tubes. Again, most operators use too many instruments, which complicate and confuse instead of being a benefit. In nearly all published illustrations demonstrating the methods of performing vaginal hysterectomy, or any form of surgery on the vagina, the uterus or its adnexæ, we find four retractors introduced, one anteriorly, one posteriorly, and two laterally, none of which is often of any benefit, and all combined result in a complication that may prevent perfect surgery by this channel. There is seldom any use for a retractor in treating diseases of the adnexæ by incision through the vaginal vault, and there is no use for more than one in vaginal hysterectomy, and in most cases all may be dispensed with. The advantages and simplicity resulting from dispensing with retractors are so striking that persons who have previously used several retractors can hardly understand why they did so. While the danger of wounding an intestine or the ureter in removing the adnexæ per vaginam by vaginal incision

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is greater than where we first bisect the uterus, they may be so minimized as to be practically of no consequence. I claim no excellence in this work over any well-trained surgeon in vaginal hysterectomy and what I have accomplished any one else may accomplish, if he knows the correct technic.

In all forms of tubal pregnancy before the end of the third month, before or after rupture, unless there is a great accumulation of blood in the abdominal cavity, the ruptured tube may be removed per vaginal incision with nearly perfect results. Of course it would not be the correct thing to attempt to complete an operation for intraperitoneal rupture in extrauterine pregnancy per vaginam where the abdominal cavity is filled with blood, but vaginal incision is often of value even in these cases. It is well known that the primary hemorrhage is sometimes so extensive as to result in shock that, for the present, contraindicates celiotomy. In these cases the custom has been to temporize until the shock may have been sufficiently combated to justify celiotomy. But often, just as the pulse becomes well perceptible, secondary hemorrhage speedily causes death. In these cases secondary hemorrhage can be positively prevented without materially endangering the life of the woman by increased shock. If she is too feeble to bear an anesthetic, then a vaginal incision may be made without it, the ruptured tube pulled into the vagina, clamped with a small forceps and left in the pelvis until the patient is prepared for a celiotomy.

During the last four years I have operated per vaginam many times for extrauterine pregnancy, all the patients having recovered without a complication or bad symptom. My experience and observation justify the belief that most of the objections now urged against vaginal hysterectomy are nearly identical with the objections urged against this method by the Paris surgeons when first practiced by the late Péan, but it is well known that these very men are more enthusiastic than was Péan, their objections having gradually faded away as they watched the results of the work of this great surgeon, and the results of operations performed by themselves. They believed then, as many of our surgeons believe now, that there is no conservatism in surgery per vaginam, while the most earnest advocate of the infrapubic method knows that by this method he can perform more conservative surgery than by any other method. If he can not positively decide whether one or both tubes should be removed, an exploratory operation is demanded; and what could be less dangerous in pelvic surgery than a vaginal incision into Douglas' pouch, through which the structures around the uterus and up to the pelvic brim may be examined, adhesions separated and the ovaries and tubes brought into the vagina, removed, if necessary, or, if not enough diseased to justify removal, treated after any approved fashion, returned into the pelvis, and the incision sutured, with a mortality that is *nil*, and with no scar nor danger of hernia. Theoretic arguments against any method of operating can not be of value when disproved by intelligent experience and observation. I have been frequently told that it is impossible to remove the appendage through a vaginal incision, or to remove the uterus without the use of speculums or retractors, without endangering important organs. But of what value is this when I am constantly doing this work without meeting with any of the dangers complained of? I do not recognize as a fact that the uterus is an important organ after the ovaries and tubes have been removed, but there are instances where it should not be removed. In these cases the patients may often be restored to health by treating the adnexæ through a vaginal incision.

The formation of abscess in post-puerperal infection may be prevented if diagnosed in its incipiency. If infection be confined to the cellular tissue in the folds of the broad ligaments, the inflamed area may be drained by vaginal incision and separation of the folds, without opening the peritoneum, but usually the inflammation will have extended to the pelvic peritoneum, and then the pouch of Douglas should also be opened and all adhesions separated, and in either event the infected surfaces should be kept apart by placing gauze, to which may be added a fenestrated gum tube to insure perfect drainage.

In operations for removal of pus in the pelvis, and its associated pathologic condition of structures, it is unnecessary to consider its etiology, the treatment being nearly identical in post-puerperal infection following labor or abortion, or gonorrheal infection, or in cases where we find pus caused by the streptococcus, the staphylococcus, or gonococcus, etc.; but where the infection is the result of the germs of putrefaction the treatment must vary. Pus in the pelvis or the tubes or ovaries can usually be treated from below, and more can be accomplished per vaginam than by abdominal section, except the separation of an over-layer of adhered intestines, and this should not be interfered with from either below or above. The cases in which the complications cause a great mortality in abdominal section nearly all get well after an operation per vaginam.

The statement often reported that after vaginal hysterectomy the vagina is made shorter and its secretions interfered with is not correct, for I have in many cases carefully examined to decide this question, and the proof is absolutely conclusive.

WHAT BECOMES OF PATIENTS AFTER VAGINAL PUNCTURE AND INCISION?*

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A paper, bearing the above title, was announced to be read before this Section by Dr. Joseph Price of Philadelphia. I am sure we all regret the inability of Dr. Price to be present. These remarks are intended as a practical reply to his question, rather than as an exhaustive article on vaginal vs. suprapubic incision.

Many years ago I became convinced that, excepting in very rare and unusual cases, puncture of the abdominal cavity for inflammatory conditions was unsurgical. I accordingly began to make use of exploratory incisions, which permitted the proper inspection of the parts affected, avoided the dangers of the blind puncture and allowed drainage, the latter becoming a safeguard or a means of treatment. I have learned to recognize the value of a vaginal incision over a vaginal puncture, when the abdomen was opened by this route.

About five years ago, after having had considerable experience, I published a summary of my operations, the results of which had been very gratifying. The methods I then advocated were at once adopted by many surgeons, and the best proof of their value is the fact that at the present time vaginal incision is being employed by a large majority of the surgeons in this country, and its merits are recognized by all but a very few.

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Some surgeons seldom employ this method, but you may count on the fingers of one hand those who do not admit that in a certain proportion of cases of pelvic suppuration a cure will be more certainly or safely effected by a vaginal incision than by an incision made above the pubis.

At that time I did not, and neither do I now, claim that vaginal incision was original with me or that it had not frequently been done by others, but I emphasized the fact that it was a rational and satisfactory surgical procedure and also mentioned the authorities who had employed the method with success. As vaginal hysterectomy had been assailed, simple vaginal incision was also attacked, but they are now both recognized as operations of the greatest value. Sometimes, when I advise the employment of vaginal incision, I acknowledge that I have made a mistake in not stating some of the conditions for which it is adapted. Let it now, therefore, be understood that vaginal incision is probably harmful in the treatment of sore throat, pneumonia, acute gastritis, urinary and biliary calculi, and that it is of no great value as a means of cure in a host of pathologic pelvic conditions in women. In the majority of instances incision through the vaginal vault is merely a surgical method of opening the abdominal cavity to reach an intraperitoneal disease, and, like a suprapubic abdominal opening, it depends on the surgical skill and judgment of the operator whether a mere exploration or a definite surgical operation is made.

Allow me to state plainly some of the conditions for which vaginal incision is especially adapted, and then I will leave you to judge without prejudice or bias because of your suprapubic sucesses, whether every-day common sense does not seem to indicate that in such cases the vaginal route is rational and the method of choice.

If a woman has a capacious vagina surmounted by an immense abdomen piled up with intraperitoneal as well as extraperitoneal adipose tissue; if well-defined pelvic disease can be felt distinctly two inches from the vulva, but can only be indefinitely shadowed by the superimposed hand above the pelvis; and if experience has taught you that an incision will cure the disease, is it possible for you to become convinced that it is proper to work laboriously in that huge cavity to reach an abscess the size of an egg which you can feel at your finger's tip in the vagina, knowing that during your manipulations the abscess may rupture and that you must cleanse the cavity completely and with a due realization of the constant danger of infecting the whole peritoneal cavity? Or, if you have a patient 65 or 70 years of age, with a weak heart, and you feel a semi-fluctuating tumor, and you observe, after a small cut through the posterior fornix, evacuation of a small ovarian cyst through this opening, pulling out of the cyst wall and ligation of the pedicle with fine catgut, that on the next morning the patient refuses to believe that any operation has been performed and can hardly be prevented from getting up, can anyone make you believe that the operation has not been ideal in its results and that vaginal incision has no place in pelvic surgery?

These operations are constantly being performed by surgeons the world over, and if you do not recognize the propriety of vaginal incision in such well-defined cases as have just been outlined, you do not give your patients the benefit of modern gynecology. It may be said that I have described extreme and unusual cases. This may be true, but by commencing with the plain cases I can better demonstrate the advantages of vaginal incision, and in an unmistakable manner. If these patients had been allowed to continue without treatment, after a time their condition might have been such that it would be infinitely better to operate on them above the pubes.

It is my intention to demonstrate that vaginal incision is not advocated as the only means of curing such forms of disease, and to indicate that what becomes of the woman after vaginal incision depends on the judgment, diagnostic skill and ability of the man who makes that incision. Would not the same rule hold good concerning the future of the patients of the surgeon who makes the abnominal incision? The rapid-fire guns of the gentlemen who have such dread of the vagina are particularly directed against our efforts to effect a cure of septic pelvic disease especially of the suppurative type. I will not take up your time by going over the already well-outlined arguments in favor of vaginal hysterectomy as a curative measure in properly-selected cases of serious infectious disease.

The gentlemen who do not realize at this time the immense value of this procedure are proper subjects for commiseration, for the surgeon who proposes to keep in the advanced ranks of the profession has already accepted the situation, recognized the importance of the new departure, and has perfected, or is perfecting, himself in the technic necessary to acquire satisfactory results.

Nevertheless, lest we might be misunderstood, it is imperative to state that no rational man has ever offered vaginal hysterectomy as a *universal* substitute for abdominal hysterectomy or for many other operations which can infinitely better be accomplished through a suprapubic opening. It should also be frankly acknowledged that, because of the perfection attained in conservative pelvic work, the radical vaginal, as well as the radical abdominal operation is less frequently required. Personally I take pleasure in putting myself on record as being of the opinion that ablation and resection of pelvic organs, short of hysterectomy, are better accomplished through a suprapubic opening, at the same time reserving the propriety of using the vaginal route in a small minority of well-indicated instances, even in these cases.

However, I desire at this time to speak of simple incision in suppurative cases. We have been informed by experienced gentlemen—few in number, however—that the operation is incomplete and leaves behind diseased tissues, and that they are often called on to operate on uncured patients who had previously been subjected to vaginal incision and drainage. It must be remembered that such statements simply mean that the primary operation was not properly indicated or that it was not properly performed, or that the first incision had served its purpose, had possibly saved the patient's life and that both the first and second operations were necessary and advisable as presenting the best and safest way for the recovery of health.

As a result of a very large and ripe experience and knowledge of the subject-matter, and with a very strong predilection in favor of suprapubic work, in which I trust I may be pardoned for saying I have achieved most satisfactory results, I am more than ever convinced that vaginal incision properly indicated and properly performed represents the ideal of perfect and conservative surgery, for no surgery is ideal unless cosmetic, and conservative as to function. It always depends on the same presentation of indications. Vaginal incision will

not cure sore throat nor will it cure many old pus-tubes or ovarian abscesses unless accompanied by ablation which is almost always better accomplished from above.

The following is an elementary illustration of the position and value of vaginal incision in pelvic suppuration: Pus in the pelvis is found either extraperitoneal, in the organs beneath their peritoneal covering, or intraperitoneal, surrounded by exudate, or both. In the large majority of cases the infection comes from the outside, the primary focus being the endometrium or the cervical tissues. After the infection extends beyond the uterus, its most common expression of definite disease is in the formation of pyosalpinx or ovarian abscess, and intraperitoneal forms of suppuration are almost constantly secondary to these.

Knowledge of the pathology of the development of pyosalpinx has demonstrated that it is essentially a subacute or chronic disease. When the patient reached the operating-table the walls of the tube are wholly diseased, and the gonococcus to which we know it owes its origin has penetrated its walls, and even the muscular walls of the uterus are not always free from these bacteria. It must then be evident even to the merest tyro in gynecology that unless the tube is completely removed the patient is not likely to recover her health. For entire removal of the disease the tube should be removed up to the cornu of the uterus. It is difficult to determine whether the ovaries are sufficiently diseased to require complete removal; in fact, we know that frequently the removal of the ovaries is not necessary. No matter what claim may be made by some advocates of vaginal operation, good sense indicates that we can remove such tubes most satisfactorily and do better conservative work through a suprapubic incision.

Occasionally, if we can be absolutely certain that the disease is of comparatively recent date, if the tube does not feel too hard and if it is situated and adherent low down in Douglas' pouch, it may be incised through the vagina and cure may follow, but the suprapubic method is preferable in nine cases out of ten.

Ovarian abscesses may be clinically classified as of two varieties—primary and secondary. The secondary variety usually follows salpingitis. An infected tube becomes adherent at its abdominal ostium to the surface of the ovary; the ovary suppurates and tubo-ovarian abscess results. The tubal abscess may, however, gradually drain into the ovarian abscess, and although the tube will probably never entirely recover, it may become small again, and to a casual observer may appear healthy and the ovarian abscess seem to be primary. The removal of the ovarian abscess may be demanded. If the abscess is adjudged to be old, if the walls are hard and resistant, and especially if there is the least evidence that the tube will require removal, as it often does, the work may be better and more perfectly done through an abdominal incision. If, however, the abscess walls feel soft, the disease is rather recent and its location favorable, and if the tube is small, a skillfully performed vaginal incision may completely cure the patient without removal of the ovary and with very slight trauma.

Primary ovarian abscess results from infection of an ovary through the lymphatic or the blood channels, usually by the streptococcus or the ordinary bacteria of suppuration. It is usually a very acute disease accompanied by fever, and is generally caused by miscarriage or by unclean operations around the cervix. If incised in its incipiency during the first six or eight weeks, and if the operation is properly performed, cure will follow and the result will represent the ideal of modern surgery to anyone who properly understands the situation and can do the work.

This paper can not be made exhaustive, as it is intended only as an argument and the time is limited, suffice it to say that complex and miscellaneous septic collections in the pelvis can be evacuated by vaginal incision, and the patients cured. Sometimes the disease is in the tube, sometimes in the ovary, sometimes in the extraperitoneal cellular tissue and sometimes intraperitoneal and protected by exudate. The result depends on the discrimination and skill of the surgeon, for, if a patient recovers after an imperfectly performed operation, or one based on wrong indications, the recovery is due to the kindness of Providence and not to the surgeon. On the other hand the gynecologist who does not thoroughly understand what can be accomplished by intelligent vaginal incision belongs to the old school and does not give his patients the benefit of what is certainly one of the simplest of surgery's most perfect cures.

In conclusion, allow me to present this opinion for your consideration: Of all pelvic diseases in women which call for operative intervention and opening of the abdominal cavity, probably 25 or 30 per cent. can be operated on to better advantage through a vaginal incision and the remainder through a suprapubic opening; but whichever method is employed, what becomes of the patient after either incision depends, not on the incision per se, but on the characteristics and qualifications of the man behind the knife.

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DISCUSSION ON PAPERS OF DRS. GOFFE, WATHEN AND HENROTIN.

DR. H. A. KELLY, Baltimore, Md.—I have very little to say, because if I had written a paper on this subject I should have expressed myself as Dr. Henrotin has done. He has not uttered a single sentence with which I can not heartily agree, and I think he has taken the right view of the matter. It is a curious thing how this subject has changed; how physicians have altered their views in recent years, and to those who are only watching us superficially, it may seem that many of us are traveling in a circle. It is but a few years since that illustrious and very charming gentleman, Segond, was over here from Paris, and addressed us in New York at the meeting of the American Gynecological Society. At that time most of us were rather rabid for the abdominal method of operating, and he for the vaginal. We uttered the reproach that the vaginal operation was done in the dark, while the abdominal was done in the daylight. We all agree that in every method of operating we must see what we are doing and control the conditions, the accidents that attend operations, hemorrhage, adhesions, sepsis, etc. I agree heartily with Dr. Goffe in saying that, all other things being equal, the vaginal operation is to be preferred. If he can show me in all cases, all other things being equal, that the difficulties of getting at the structures, of handling them and of treating them conservatively are the same, I will give up the abdominal and follow the vaginal operation. At the present time I am an advocate of both methods, and my position, as well as I can define it, is briefly this: I make just the exception that Dr. Henrotin makes for diseases which involve the structures in the upper tract. He goes through the abdomen in those cases, and so do I, because we can get at the diseased mass more quickly. We have a large open passage through which we can attack the diseased part, and we can do all kinds of extremely delicate operations without tearing structures, consequently the abdominal route is to be preferred to the vagina, for affections located in the upper part of the uterus. I prefer the abdominal route for all conservative operations. I hardly think one can do as good conservative work in operating by the vagina as through the abdomen. Some years ago the vaginal sectionists, who always took out the uterus, criticized me for not doing the same thing, and some of my visitors on the other side of the water, when they saw me operate by the abdominal method, were itching to get at the uterus which I would leave in with an ovary or half of a tube. The situation is this: Our vaginal sectionists must necessarily work through the pubic arch. Let this drawing represent the pubic arch (illustrating); they work up through the vagina and do so more or less at a disadvantage. This is particularly

true in many cases if the structures are more or less fixed or bound down by inflammatory adhesions and infiltrations to the surrounding tissues. Given a big hole through the abdominal wall, and it needs but little demonstration to show that an operator who is not skilful is going to do better work. Having said that, I am going to make an exception. The lower route—the vaginal—is *par excellence* the route for the treatment of pelvic abscesses, as Dr. Henrotin has so beautifully described. One of the first gynecologic cases I ever saw, in 1883, was cured in this way. Since then, and very earnestly and persistently within the last ten years, I have been following the vaginal method of treating pelvic abscesses. In my last case I operated on just before leaving home, I opened the abdomen to know what I was doing so as to make my drainage perfect and to empty the sac rather than run the risk of getting into the peritoneal cavity. I mean by pelvic abscess those common abscesses located in the ovaries, tubes, or both ovaries and tubes, not the rarer forms of abscesses located in the cellular tissue. I mean the commonest abscess, of which the gonorrheal abscess is the type. The vaginal route is the best for this class of cases.

I am going to tax your patience by giving a few statistics. I wrote to 100 of my pelvic abscess patients, treated in this way, and received replies from 59 operated on between 1893 and 1897. Among these 59 patients there were 38 who were in good condition; 13 reported themselves as absolutely well and free from all symptoms; 10 had some degree of abdominal discomfort; 5 some menstrual pain; 5 more had some menstrual and abdominal pain; 2 complained of rectal pain and tenesmus; 3 complained of constipation, and 9 complained of having experienced but little improvement in their symptoms; 5 more expressed themselves as having experienced no improvement. I put these 9 in the category of ill results from the operation. There were 3 deaths from uremia, 1 from general infection because the operation had not been performed in time. A primary exploratory incision was practiced 13 times; recto-vaginal fistula occurred 4 times, soon after rupture into the rectum, previous to the puncture. The connection between rectum and vagina healed spontaneously in three cases, and one case was unhealed. I found it necessary to open at the site of puncture in 2 cases, and so on.

This is not a perfect showing, but remember that I have taken these from cases brought in to me on litters; I have operated on women in a desperate condition, and, as the records will show, some of them were in a dying condition. Two of them were uremic. It was not a question of choice of method in these cases. I could not have done anything else, as they would have died instantly on the table if I had opened the abdomen and attempted to enucleate the abscess. In the worst cases of pelvic abscess we must adopt the vaginal route, puncture and drainage. Then, bear in mind, if anything further is to be done, if the patient complains of sequelæ, has trouble from adhesions, she is in better condition at a later date to have the abdomen opened and the diseased structures removed, and a more thorough operation done.

DR. JOSEPH EASTMAN, Indianapolis, Ind.—It is very embarrassing to be called on to participate in a discussion when Dr. Henrotin has incorporated my views in his paper, absolutely, without an exception. He takes the ground which I think we should all endeavor to take, that is, keep clear of going into the abdomen either by the vaginal or abdominal route with some fixed, cut-and-dried method. When asked how I would treat a fibroid tumor, I would answer, what kind of a tumor is to be treated? This would have reference to the kind of pedicle the tumor has. So, in a given case, in deciding whether to adopt the vaginal or abdominal route, it is well to consider what we are going after and how we are going after it; in what way we expect to find it, and what to do with it when we do find it.

I have some peculiar views in reference to dealing with tumors and abscesses by the vaginal route. For some fifteen years I have done a large amount of work dealing with diseased conditions within the pelvis, and in so doing I prefer to have the patient in the Sims' position, not simply lying on the side with knees drawn up, but having the patient lying on her bosom so that the coccyx is on a higher plane than the urethra; then, by dilating the rectum and using a short speculum, I retract the perineum and get a much better view, making the structures behind the uterus vastly more accessible than I could do by using a position where the symphysis pubis would be in my way. I am firmly convinced that whoever attempts to deal with diseased structures by the vaginal route, as Dr. Henrotin has indicated, will require a much larger experience before he can work satisfactorily, than by the abdominal route. One may, in the abdomen, in a patient not too fat, deal with pelvic abscesses, diseased tubes, with much less experience than he could venture to do by the vaginal route. Not all abscesses are cured by vaginal puncture and drainage, and, as Dr. Kelly suggests, we may have to open the abdomen later and break up adhesions. I find it necessary to drain ovarian abscesses, and I have repeatedly removed pus tubes of considerable size through an anterior incision between the uterus and bladder, and I find, with increasing experience, that I can do this in a larger percentage of cases than formerly.

I will summarize simply by saying that both routes have their advantages. The elder Byford wrote an article, which I read, in which he spoke of opening abscesses through the vagina and through the rectum, and dilating them freely for the purpose of securing the best possible drainage, and at that time reported very satisfactory results. So the Frenchmen have not taught us so very much. They have only called our attention to the advantages of operating on these cases by the vaginal route.

If any of you will have your patients assume the Sims' position in these operations, you will readily see the advantage of it. It is not uncommon for me to have my patients assume the knee-chest position for a little while before they assume the Sims'; in that manner the coils of ileum gravitate better, and the structures, which would otherwise fall down and interfere somewhat with one's work, are drawn forward out of the way, I have no difficulty in operating on patients in the Sims' position.

DR. J. B. MURPHY, Chicago—The part of this discussion which I wish to consider concerns the infective lesions in the pelvis, and I am sorry that Dr. Kelly has left, as I would like to learn from him what pathologic conditions he included under "pelvic infections;" does he mean abscesses of the tubes or ovaries, the variety following gonorrhea, including with these the cellular, peritoneal, tubal and ovarian suppurations occurring post-abortive and post-partum from infections by the vaginal route? Does he include the same varieties that Dr. Henrotin includes?

DR. HENROTIN—I believe the ground was taken that pus tubes were better operated on by the abdominal route, and that in dealing with other forms of infection or pathologic conditions it was better to operate by the vagina.

DR. MURPHY—We want to cure the patient by one operation, if possible. We must therefore ask, what are the pathologic conditions induced in the tubes by gonorrheal infection? The changes produced in the tube are similar to those produced in the male urethra by the same disease. Gonorrheal infection tends to retention of secretion in the tube: 1, by edema of the mucosa, and, 2, by ulceration, stricture and valve formations particularly within an inch or an inch and a half of the uterine cornua, retention abscesses, dilatation and chronic suppuration of the tube are produced. If we drain the tube by the vagina, we have a pathologic condition of the tubal mucosa remaining with a stricture at the uterine and a closure at the fimbriated end, from inflammatory adhesions. These are the results of gonorrheal infection and prevent the natural drainage; the tube must therefore refill after the communication with the vagina has closed, and the result is retention of secretion and accumulation of the products of infection. Ovarian abscess is not often associated with gonorrhea, but is more frequently the result of streptococcus or staphylococcus infection following the puerperal or abortive period. Ovarian abscesses are not common lesions; we do not see many uncomplicated ones. Suppuration of the ovary can be cured by drainage, if the wall is not a cyst wall. If it be a cyst wall, lined with epithelial cells, then drainage is not sufficient.

I am particularly pleased with the position taken by Dr. Henrotin in considering this subject. After all, the conclusion we reach is about this: We select the abdominal route for those infections involving membranes lined with epithelial cells; if the infection be of an acute streptococcic or staphylococcic type, merely drainage cures the inflammatory process. We must distinguish between the types of infection. In abscesses in the cul-de-sac of Douglas, in abscesses in the broad ligament, drainage by the vagina is indicated. In the other varieties of infection, the abdominal route is preferable.

DR. W. E. B. DAVIS, Birmingham, Ala.—In the main I indorse the position that has been so clearly and fairly outlined in the paper of Dr. Henrotin. When double salpingo-oöphorectomy is necessary, the choice of operation will depend largely on the decision as to the disposition of the uterus. If the uterus is to be removed in such cases, the vaginal route could be adopted with advantage in a good proportion of operations. Fortunately, that is not necessary, and hence the abdominal operation is preferable, as the aid of positive sight is given, thus affording a wider field of operation and an opportunity for conservatism.

It should be the aim and pride of the surgeon to preserve everything consistent with thorough surgical work, and not to

sacrifice important organs because it can be done with only a small mortality. We are told that the uterus has no function after the removal of the appendages, but this has not been demonstrated; while, on the contrary, we know that the sexual life of the woman is very much better preserved by leaving the uterus, and that the mental effect is also much better. A slow convalescence, or even a second operation, is preferable to its removal, unless very much diseased. It is a reflection on the correctness of the reports of complete recoveries of such a large percentage of cases by many most excellent surgeons, when the uterus was not removed, to accept the argument now being used in favor of hysterectomy in all these cases.

Vaginal incision for the drainage of pus in the pelvis, not confined to the tubes and ovaries, has been practiced for a long time with very gratifying results. This procedure is so old that it is hard to say when it was not resorted to. Such cases would recover, almost without exception, from the immediate attack, and a large number recovered completely and afterward bore children. This result was due to the drainage of the tube or ovary through the peritubal or periovarian abscess, just as cases of appendicitis are cured by the rupture of the diseased appendix, producing an abscess, which is evacuated by the surgeon, the appendix being drained through the abscess. In cases of abscess from lymphangitis and phlebitis this treatment was all that was required, but cases of abscesses due to the tube or ovary were not all entirely relieved, due to the fact that the pus-tube or ovarian abscess was not satisfactorily drained. More recently, pus-tubes and ovarian abscesses have been incised and drained through the vagina with permanent recoveries in a good proportion of cases. These are the very cases where the vaginal operation and hysterectomy have been recommended so highly by the French surgeons. Yet a large percentage of these cases can be relieved by vaginal incision and drainage. If not relieved, the patient's condition will be made better by getting rid of the pus, and later on an abdominal operation can be done and the patient cured by the removal of the appendages —and perhaps from one side only.

The French surgeons, in some cases, when unable to remove the diseased tubes and ovaries after hysterectomy, have been contented to open the masses containing the diseased appendages, and to pack with gauze. The drainage in such cases has brought about complete cures. The same result could have been accomplished without the removal of the uterus, by vaginal section and the breaking up of adhesions, with drainage. I would not be misunderstood as believing that all cases can be cured by incision and drainage, but so large a percentage can be relieved without the loss of the uterus and adnexa, they should be given the benefit of this conservative procedure before more radical measures are resorted to. Especially should this be done in young women, to whom the loss of the appendages and uterus means the loss of so much that is necessary to their happiness. This treatment has been highly commended, and my own experience with it has been so satisfactory that I am convinced of its great value and the necessity of its more general adoption. Gonorrhea cases are not amenable to this method of treatment.

DR. WILLIS G. MACDONALD, Albany, N. Y.—I have listened to this discussion with interest, and I might say also with comfort. I do not, at the present time, feel that my own practice in regard to this subject can be taken as a guide. A few years since I found my opinions were diametrically opposite to those held by Dr. Henrotin. As the years have gone on I find that we are coming nearer to an agreement, particularly in that class of cases of which Dr. Kelly has spoken—cases that are admitted into large hospitals and are brought in on litters, women with temperatures running almost anywhere, and with pulses running up to 140 or more, jaundiced, and profoundly septicemic. In such cases we are frequently able to make an incision, open up the abscesses, and do a life-saving operation, which in a large number of instances is followed by a permanent cure. This is not so, however, in all cases; but we get patients into a condition where, after three weeks, the profound symptoms of septicemia have passed away, and we are then able to go in from above, clear out the old abscess cavity, remove the diseased appendages, and effect a cure. Such an operation, undertaken in the first condition, would inevitably lead to a fatal result. Out of some little experience in dealing with pelvic abscesses, I may say that our practice in Albany for a number of years has been primary puncture, or puncture with incision, and some ten or twelve years ago Dr. Clinton Cushing of San Francisco presented a method for attacking these abscesses which so influenced me that my colleague—Dr. Vander Veer— and myself continued the method for some little time, but within the last five years, instead of making puncture with any form of dilating trocar, we have made an incision with scalpel or scissors opening through the cavity, and we have had no occasion to regret this method of procedure. I do not mention it as an argument against vaginal puncture or vaginal incision, because a certain number of cases must be operated on secondarily through a higher incision. In chronic cases in which we have abscesses showing a disposition to reveal old pus tubes, with many adhesions to the intestine, for my own personal comfort I make a free abdominal incision, believing that we can do more thorough and safer work for the patient than we can by the vaginal route. It seems to me that the more experience we have in this direction, the more we are coming to appreciate the value of the vaginal route in treating certain of these conditions; and that which five years ago seemed to some of us not to be good surgery we are to-day quite willing to indorse.

DR. CHARLES P. NOBLE, Philadelphia—This subject has been so thoroughly gone over that I shall confine myself largely to my own work along this line. The first point I wish to mention is "vaginal puncture." It seems to me that this is an unfortunate term, because while Dr. Kelly uses the term, we all know that these abscesses are not merely punctured, but are incised and well drained. At the same time, I think the name gives a false idea to the profession in general, and those who perhaps are guided by Dr. Kelly's nomenclature, make a mere puncture instead of a good incision. I am a firm believer in vaginal incision for the treatment of certain pelvic abscesses, but am not a believer in vaginal puncture; in other words, I believe we ought to make a proper selection of cases for the vaginal operation, and the cases which are best suited for this method are those mentioned by Dr. Kelly, that is, those patients that are brought to the hospital extremely ill; they have been in bed for a long time; they are septic, with rapid pulse, and any abdominal surgeon of experience knows perfectly well that some years ago, when he had to do abdominal section on those cases, a large percentage of them died, and the same cases if treated by vaginal incision, will almost all recover. I have treated fully fifty such patients in this way, with only one death. If the same number had been treated by an abdominal operation, I am sure 20 or 30 per cent. of them would have died. In addition to these, there is another class which, I take it, Dr. Henrotin believes in draining, and that is the puerperal ones. If the pus is in the broad ligament, vaginal incision is all that is necessary to effect a cure. When we have pus-tubes in puerperal cases, if the drainage is well done the patients get well, and a good percentage of them afterward have babies. I recently reported many cases of this kind. Having stated that I am an ardent advocate of vaginal section in this class of cases, I must say that *in general* I am an equally ardent advocate of the abdominal as against the vaginal operation. It seems to me that to those who have had a large experience, the advantages are so great that I am always surprised at the ingenuity of those who resort to the vaginal method and are obliged to overcome these great difficulties.

The objections that were offered by Dr. Goffe must have simply a local application. I have done abdominal operations for some years, and I have yet to see the first of my patients who objected to an abdominal scar. While we should be serious in a medical debate, at the same time, as a matter of fact, woman's dress has not so altered that there is any occasion for her to show her abdominal scar, and this is a sufficient answer to such an objection.

Hernia we all hear much about and see very little of. To the best of my knowledge, I have had but four hernias in six years, following all of my operations. The percentage of hernias becomes very inconsiderable if a man follows a careful technic.

The objections to the abdominal route, referred to by Dr. Goffe, are comparatively trivial, and when we contrast them with our ability to deal with intestinal adhesions, to take out the appendix when involved—and it is involved in a definite percentage of the suppurative cases—the advantages outweigh the possible development of a hernia in the abdominal scar. The men who do vaginal work, when they operate for some inconsiderable trouble, such as a retroversion, sometimes have an ugly and concealed hemorrhage, and they have to do a hysterectomy or else the patient bleeds to death. Dr. Henrotin told me of such a case that occurred recently in the practice of one of the prominent advocates of this method. Instead of being converted to employment of the vaginal route, by observing the work of its advocates, this has always had the reverse effect on me. Furthermore, it requires much courage to deal with the graver pathologic conditions through the vagina. Dr. Goffe referred to having removed a ten-pound fibroid tumor through the vagina. When we stop to think that a full-term baby only weighs seven pounds, and that a ten-pound fibroid is about as large as the largest baby, to cut up the tumor for the sake of taking it out through the vagina, when it can be much more easily removed through the abdomen, calls more for admiration

of the ingenuity on the part of vaginal sectionists than it appeals to us to imitate their example.

DR. J. HENRY CARSTENS, Detroit, Mich.—Dr. Noble has stated one side of this question, namely, that puerperal abscesses, when treated by vaginal puncture and drainage, are absolutely cured. We have, however, pus tubes which are not cured, and we ought to try and distinguish between the two in reference to prognosis. If we have a puerperal abscess in the broad ligament, we can almost guarantee that the woman will be restored to health without any further operation than vaginal puncture and drainage. If we have a pus-tube which has dropped into the posterior cul-de-sac, which we drain in order to give the patient a chance and to guard against sepsis, we may afterward have to operate, and we ought to make a prognosis accordingly.

I do not believe in operating on cases of extrauterine pregnancy by the vaginal route; I think the abdominal route is the correct one, although once in a while one can do good work in such cases by the vaginal route.

There is one other point I desire to call attention to, that is, there are certain cases where I think vaginal hysterectomy is the proper operative procedure. Where you have pus tubes that may be quiescent, but with them you have a retroverted or lacerated uterus, a degenerated mucous membrane, vaginal discharge, with uterus, ovaries, tubes, everything, adherent in one solid mass, what are you going to do? Are you going to operate and sew up the lacerated cervix? Are you going to curette the uterus, or open the abdomen, take out the ovaries and tubes and make a suspension of the uterus, or will you make a vaginal hysterectomy? It seems to me that there is one exceptional case where vaginal hysterectomy, removing the uterus, tubes, etc., altogether at one time, will produce less shock and bring about a more permanent result than any other method. It is *the* operation for women who are near the menopause. The age of the woman must be considered, and if it is a woman near the menopause, you can make a vaginal section and remove the uterus per vaginam; but if you have a young woman to deal with, I hold that you should make an abdominal section and do everything you possibly can to save some parts of her generative organs and not unsex her.

DR. EMIL RIES, Chicago, took part in discussion at this point, and with the aid of blackboard sketchings dwelt on the anatomy and pathology of pelvic diseases in women. He discussed at length both the abdominal and vaginal routes in dealing with intrapelvic pathologic conditions, and expressed the opinion that no one method is to be preferred for all cases. He sometimes resorts to the vaginal, and, at other times, to the abdominal route, and, if necessary, to the combined method.

DR. HENRY O. MARCY, Boston—I am sure the Section is to be congratulated on having such a free and spirited discussion on this important subject. Nearly thirty years ago the profession of two continents was astonished by a contribution on this topic by the until then obscure surgeon of northern Georgia, when he reported, for the first time, his work to the medical profession of twenty-seven cases of vaginal operation on the uterine adnexæ. If the lamented Robert Battey could have been here to-day he would have specially rejoiced, since it would have shown him that the fruitage of his work had not fallen on barren soil. Our French confrères have taken up the work that Robert Battey left, so admirably done, and if the younger men of the profession will turn back the pages, they will read, with much profit, the wise, judicial descriptions and advice that he gave on pelvic operations on the uterine adnexæ. I am glad to feel that we have come to a judicial opinion, a sort of consensus of judgment, as it were, as to how we should deal with pus in the pelvic basin. I can emphasize every word of each of the speakers in this direction, and Dr. Henrotin sets forth my ideas as clearly as if they were written for that special purpose.

Coming to the first paper, that of Dr. Goffe, I must take certain exceptions to the remarks contained therein. We should use, as far as possible, our common senses, and the common sense of utilizing touch and sight means so much to us. I have removed a four-pound uterine tumor by the vagina, and I have carried a blistered thumb and finger as the result for a week. It is not easy work, and if it is not safe to the patient, it is certainly not always wise. Within the abdominal cavity we can do splendid plastic surgery on the peritoneum; and in this, at least, we have a great gain over the work done by the vaginal route.

In reference to hernia, it has been said that 10 per cent. of abdominal sections are followed by ventral hernia. I have taken careful recognition of my last thousand cases of laparotomy, and I find, without a single exception in all strictly aseptic work, that I have not had ventral hernia. This depends on the closure of the abdominal wound in layers.

So far as the scar is concerned, if the work is done with surgical tact and skill, at the end of a few months there is very little trace of where the work had been done. I consider it rather hypercritical to call attention to the damage done to the abdominal wall; with proper care it can be reconstructed safely, and the patient remain as well as if she had not been subjected to operative interference.

DR. CHARLES A. L. REED, Cincinnati, Ohio—I have rarely had an opportunity of listening to a symposium of papers and of discussions so instructive as those which have been presented to-day. The idea of such an arrangement is a very happy one, because it tends to give expression to the present status of two opinions which can not be recognized as essentially antagonistic, but, in the light of the discussions to-day, are often supplementary and co-operative. But a few years ago the edict came from England, that all suppurative conditions witnin the pelvis were to be attacked by the abdominal route, and there came back, as it were, an echo or protest from France, or, perhaps better, a proclamation that all such conditions were to be dealt with by the vaginal route, and we have finally been able to arrive at that philosophic position whch enables us to recognize that there is perhaps, after all, a soul of truth in things false as there is a soul of good in things evil. Now, when shall we adopt one method, and when shall we adopt the other? To translate those conditions into words is to defy the possibilities of the vocabulary. These conditions are to be determined clinically and on the spot—determined not before operation is begun, but frequently after the initial steps have been taken. So far, this discussion has attempted to define conditions under which the one method should be employed, and those under which the other method should be employed. There has been a presumption of diagnostic acumen on the part of some of the speakers of which I, at least, do not pretend. When a gentleman stands before this audience, for instance, as the special pleader for vaginal section, and undertakes to tell us exactly under what circumstances it should be undertaken; when he tells us, at least by inference, that he is enabled to determine, even in advanced cases, exactly what intestinal adhesions exist, exactly what complications are to be found higher up in the pelvis; when he informs us that he can tell exactly which of the various varieties of abscess exists, he assumes a degree of knowledge the possession of which I have found to be but rarely demontrated in the regulations of the operating-room of this distinguished operator, or operators. I have had the pleasure of visiting the operating-rooms of several gentlemen who feel that all operations for the class of cases under consideration should be done by the vaginal route. I have seen them relieve the tubo-intestinal adhesions and the ovaro-intestinal adhesions, and the adhesions that were high up; I have seen them eviscerate the pelvis by this procedure, and I have seen patients shortly afterward show fecal fistula that had gone without detection at the time of its infliction. I have seen them operate to control a hemorrhage high up which had defied detection at the time of operation, and I have seen them inflict surgical injuries, as cuts, which have been enumerated by Dr. Noble of Philadelphia, etc. I do not mention these things as an indictment against the vaginal method of operating, but, on the contrary, to show conditions the existence of which demonstrates the fact that this operation should not be selected in all cases; that it should not be adhered to, even after it is once undertaken if high-up complications are found to exist. On the other hand, my practice has been based on the conviction that it were wrong to attempt the enucleation of pus pockets, whether they consist of ovarian or tubal tissue, or whether located in the broad ligaments. I say, I have proceeded on the conviction that it is wrong to attempt to remove these pus pockets in the presence of acute infections in the intensely active stage; in other words, in those stages in which a suppurative process is indicated by an intense leucocytosis or by oligemia which attends this state of affairs. In these cases vaginal puncture is a conservative step and its application may be practiced with benefit. I have found, after making an exploratory abdominal incision, if the tubes and ovaries were not involved, that by using the intraabdominal finger as a guide, and making an incision along the line of Poupart's ligament, opening up by that route and establishing through-and-through drainage, it enabled me to control the pathologic conditions. I have not encountered this condition of blind exploration in the pelvis that some speak of, and I do not understand the force of that reference. In this day of Trendelenburg position and of intra-abdominal illumination and of refined technic, I can not understand why such a criticism should find credence.

DR. HENRY T. BYFORD, Chicago—It is my duty to say a word in favor of vaginal section as against some of the remarks that have been made, believing, as I do, that it has not been given a good showing. Vaginal section is as yet in its infancy. It is

only about ten years since French surgeons began to advocate it. What I shall say will be confined largely to vaginal section without the removal of the uterus, as I have had considerable experience in that regard. I commenced to do vaginal section in the days before we understood asepsis as well as we do now, that is, about ten years ago, when I did not understand how to thoroughly disinfect the vagina. I got infected ligatures and abscesses after some of my first operations, yet my first sixty cases, operated on in this way, all recovered with the exception of one. At that time, and with no more experience than I had had with this particular method of operating, I did not think abdominal section could be compared to it, at least, it could not in my own practice.

I have done about everything, I think, that is done by the abdominal route, on the uterus, ovaries, tubes, etc. But we must choose our cases. We can not remove ten-pound fibroid tumors through the vagina, that are situated high up in the abdominal cavity, yet we can treat some cases of pelvic disease better by the vaginal than by the abdominal route. If the diseased tubes are high up and firmly adherent laterally, we ought not to attempt to do vaginal section and tug at, and perhaps tear off, the cervix in a desperate attempt at the impossible. When the cervix can be pulled forward and the adherent tubes be easily felt, there is an elasticity in the broad ligaments; and the ovary can be pulled down and ligated without tearing it. If the uterine tumor or tumors are small, we can certainly get at them and deal with them through the vagina as well as by an abdominal section. If we make a large abdominal opening, we can work more easily from above, but the consequences are more liable to be grave, and we can not give patients as good assurances of recovery as when we operate from below. Considerable trouble has arisen from the fact that men do not know what cases should be operated on by the abdominal route, and what cases should be dealt with from below.

Dr. Eastman is frank enough to say that he can do better work to-day through the vagina than he did formerly. Others will do better and more work through the vagina after a time. Our ability to deal with pathologic conditions by the vagina, efficiently, comes with increased experience. I venture to say, that one-half or more of the ordinary pelvic conditions, that is, small pelvic tumors and diseased tubes, etc., can be reached and dealt with by the vaginal route.

DR. JOHN B. DEAVER, Philadelphia—I congratulate Dr. Henrotin on the good sound surgical sense expressed in his paper. It is a question largely of discrimination in selecting the route through which to deal with the pathologic conditions under discussion. As to the class of cases referred to by Dr. Kelly, and by one of the other speakers, where patients are brought to the hospital almost *in extremis*, there is no question about the superiority of the vaginal incision under those circumstances. I have repeatedly done these operations without giving an anesthetic, the patient's condition not permitting it, and I have seen them recover.

Coming to the question of extrauterine pregnancy, there was one point made with reference to two sittings. When cases of extrauterine pregnancy are seen early, when bleeding is going on, I would raise my voice against the vaginal operation. Those are the cases that unquestionably call for opening the abdomen in order that we can see what we are doing, and that enables us to flush properly and drain, if necessary. Drainage is necessary in the majority of cases. The cases of extrauterine pregnancy that are seen late, after absorption has taken place, with blood clots remaining in the cul-de-sac, may be suitable for vaginal drainage.

DR. WALTER B. DORSETT, St. Louis, Mo.—Careful consideration of the facts in connection with this subject will convince the unprejudiced mind that our advancement has been very slow in dealing with the class of cases that have been brought up for discussion. For many years I have indorsed and practiced vaginal puncture and drainage in a certain class of cases. Five years ago I read a paper at the Toronto meeting of the American Association of Obstetricians and Gynecologists, in which I used almost the identical words used here to-day, "that in the early cases where we have the cul-de-sac of Douglas filled with pus, we should open the cul-de-sac and let out the pus, and do an abdominal operation at some other time," but sometimes, gentlemen, that time does not come, and the patient gets well without a laparotomy.

I want to further add, and if need be emphasize, that this idea of vaginal puncture and drainage is by no means new. The technic and execution have, in all probability, been greatly improved, but it is a mistake to say that it is a new idea. It certainly seems the most rational mode of handling one class of cases, the class in which we have pus in the cul-de-sac of Douglas, with or without prolapse of the tubes, the tubes being filled with pus, or even when one or both ovaries is the seat of an abscess. By prompt action we can often save the patient an abdominal section, by simply opening and draining the abscess.

DR. F. F. LAWRENCE, Columbus, Ohio—Extremes are dangerous, it matters not whether in gynecologic surgery or otherwise. In dealing with the question of pus in the pelvis, the location of the pus should guide us largely in selecting the particular method of operating for its removal, whether it be the vaginal or abdominal route. If we have a freely movable tube, whether it contains pus or blood, whether it be a simple pus-tube or a tubo-ovarian abscess, the vaginal route under certain conditions is imperfect. There can be no question that when pus is located and has burrowed down into the cul-de-sac, and the patient is septic, vaginal incision for the purpose of evacuating the pus and relieving the septic condition is of prime importance, and the freeing of adhesions and of dealing with complications are of secondary importance at that time, but we must not place ourselves in the position, as surgeons or gynecologists, of adopting any one procedure to the exclusion of another. Each individual case must be a law.

So far as extrauterine pregnancy is concerned, I have seen a number of suppurative cases in which the fetal remains and intestinal adhesions were situated high up, and yet the abscess bulged low down into the cul-de-sac. If we had expected to afford permanent relief by vaginal incision, it would have been an absolute failure.

DR. JOHN M. DUFF, Pittsburg, Pa.—I am glad we had this symposium. It shows a freedom from dogmatism on the part of the members of the ASSOCIATION. It is simply absurd for any one to say that vaginal hysterectomy is the proper method of operation in every case, and it is equally absurd to say that it should never be performed. The conscientious operator will study his case carefully and select the operation best suited to the case in hand.

DR. J. RIDDLE GOFFE, closing the discussion on his part—All the critics have admitted that in desperate cases, when patients are *in extremis*, have pus in the pelvis and need operative interference, the vaginal route is the one to adopt. Why? Because the pathologic conditions can be dealt with through the vagina with much less serious consequences than through the abdomen. The same reasoning holds in all cases. I mentioned a variety of cases that have been operated on as a matter of experiment to show what can be done through the vagina. I do not wish to be understood as advocating the vaginal method for the removal of ten-pound fibroid tumors. The tumor I spoke of nearly killed the surgeon in his struggle to remove it. But small fibroid tumors can be enucleated through the vagina as readily as through the abdomen. Moreover, I wish to be distinctly understood as saying that in any condition where I can not fully complete an operation through the vagina, I do not hesitate to resort to laparotomy. The vaginal incision is an exploratory one, through which can be learned what the condition is, and if, after careful exploration, it becomes necessary to do a laparotomy, there is no disgrace attached thereto.

I did not go into the technic of the operation. Last year, at the Denver meeting of the ASSOCIATION, I read a paper before this Section in which I did go into the technic. When I speak of vaginal section I did not mean simply puncture in the posterior fornix, but a free incision into the peritoneal cavity and another when necessary throughout the whole length of the anterior vaginal wall, dissecting off the vagina from the bladder, for an inch and a half either side of the incision, dissecting the bladder from the uterus, opening up the peritoneal cavity, putting in a retractor as well as the finger, and seeing just exactly what is being done. Through this incision the uterus is anteverted, brought down into the vagina, and pulled away out to the vulva, so that this class of work can be demonstrated to students. The structures are easier to get at than through an abdominal incision.

DR. W H. WATHEN, closing the discussion on his part—The subject has not been discussed in the broad way I supposed it would be. The remarks of nearly every gentleman have been confined to the treatment of pus-tubes, which is only a small part of vaginal work, or diseases of the pelvic organs. I regret that other phases of the subject equally important have not been discussed. I have listened attentively to the remarks that have been made; some of the members have said that surgery per vaginam is not conservative; that when we begin we can not stop. When men talk that way they do not understand vaginal work. Every man who understands how to operate on the adnexæ or uterus per vaginam goes through the vaginal fornix, anteriorly or posteriorly, where he does not remove the uterus; he deals with the ovaries and tubes; these structures can be brought through the small incision into the vagina, and examined by the sense of sight as distinctly as the vaginal wall. This can be done without the use of retractors,

but with the finger through the small vaginal opening. If but one ovary is diseased, take it away, leave the other. If they are both diseased, remove them, the tubes likewise. If neither is diseased, treat them as indicated, return them, and suture the vaginal vault. Is not this conservative surgery?

I believe that nearly every pelvic pus case is amenable to treatment per vaginam; we may cure cases by incision or drainage, or through an incision, take out both ovaries and tubes if they are diseased, and it need not matter whether the pus is the result of gonorrhea, of sepsis, or what not. If you can not do efficient work from below, then resort to laparotomy. I especially emphasized the fact that there are many cases in which we can not operate by celiotomy in extrauterine pregnancy immediately after rupture, because of the great shock from loss of blood. In those cases where the abdominal cavity is filled with blood, we may, through a vaginal incision, and without further shock, bring the bleeding tube into the vagina, control hemorrhage by applying a small clamp, and, after the patient has rallied sufficiently perform celiotomy and cure her.

DR. F. HENROTIN, closing the discussion—In my paper I made a plea for discrimination between cases. We are all here to help each other, to compare notes, to see of what value we can be to one another in showing the results of our experiences of last year's work. We will soon meet again, when we will compare notes again. Meanwhile, I would give a lesson to one or two of the gentlemen who have taken part in this discussion, as well as receive some lessons myself. I would like to give Dr. Kelly a lesson with reference to opening up pelvic abscesses. He said he was afraid, in opening these abscesses, of entering the abdominal cavity, which shows that he does not understand, in my opinion, the true manner of operating on pelvic abscesses. As a matter of fact, in every pelvic abscess operated on through the vagina, we can do nothing else than to fail to open the abdominal cavity. We must always open it. If this is not done, I do not wonder that some of you do not have good results. I do not like to give figures, but I have operated on more than a hundred cases of pelvic abscess vaginally, and have always opened the abdominal cavity, making sure that I have thoroughly explored the pelvis and thoroughly drained.

CONSTIPATION IN INFANTS.*

BY H. M. McCLANAHAN, M.D.

OMAHA, NEB.

My remarks are limited to a consideration of this condition in infants from birth to the age of 6 months. Within the past two years I have had twelve babies in my care, suffering with constipation, and what I shall have to say is based largely on the study of these cases. The most important fact to be determined is the true cause, and each individual case requires special study. The causes in infants are entirely different from those that pertain to children and adults. Rickets is rare in children of this age, although a frequent cause in older children. Although carefully looked for, none of the manifestations of rickets were discovered in any of my twelve cases. Want of tone in the lower bowel, due to weakness of the muscular fiber, is probably a frequent predisposing cause; but seldom is it the whole cause. The real causes may be grouped under two heads: 1. the quality, quantity and method of feeding, and 2, the anatomic condition of the colon.

Under the first head nine of the twelve cases may fairly be classed; of these nine cases, seven were bottle-fed and two breast-fed babies; of the seven bottle-fed three were fed on condensed milk, two on Mellin's food, with milk, and two on milk variously diluted. In all these cases it will be observed that they were receiving a food deficient in fat; in some the casein was in excess; in others, those on condensed milk, it was deficient. In the two breast-fed babies I made an analysis of the milk and the fat was about normal in both, and the casein greatly in excess. I think the important element in producing constipation was the lack of sufficient fats, and excess of casein. Of the remaining three cases the constipation began at birth, and persisted in spite of treatment for months; one was a bottle baby, the other two breast-fed; in none of them did the food, however modified, benefit in the removal of constipation; and in these three cases I believe the constipation was due to the anatomic condition of the colon. Prof. A. Jacobi, in 1869, pointed out this as a cause of constipation; even at this day almost no mention is made of it in our text-books. The colon is normally longer in the infant than in the adult, and more loosely attached; in some cases there is no question but that owing to its length it doubles on itself, producing a reduplication of the folds of the bowel with closure of its lumen. This condition presents a mechanical obstruction to the onward movement of the fecal mass. Being a congenital condition, explains why these cases are not amenable to treatment. The diagnosis of this condition must be made by exclusion. In one of my cases, imperforate anus, or some arrested development of the bowel was suspected until a careful examination revealed the true condition.

TREATMENT.

In the first class the question of the diet is of the greatest importance; no arbitrary rule can be given; each case has its peculiarities, which must be studied. The percentage of fat should be increased, and the percentage of casein reduced. The character of the stools should be carefully noted; when light-colored and dry, the casein is to be decreased, and in some cases milk should be carefully peptonized. In two of my cases I found the addition of a teaspoonful of malt extract at each feeding a decided benefit. Correction of the diet however, will not always cure constipation, and a certain amount of drug treatment is necessary. My first choice is for the resin of podophyllin, given in alcohol in doses of from 1/40 to 1/24 of a grain. When the discharges are coated with mucus, phosphate of sodium is an excellent remedy, given in the form of a saturated solution. If a little orange juice is added to the dose when given, the child will take it more readily. Where there is muscular debility as indicated by tympanitis and flabby muscles, strychnin and nitric acid are the best remedies. In these cases, massage, not only of the abdomen but of the entire body is of decided benefit.

In the second class neither food nor medicine is of much benefit; indeed, catharties are not only harmful but dangerous. I wish to call attention to the digital examination of the rectum, not only as an aid to diagnosis, but as a method of treatment; with index finger oiled and inserted into the bowel, and gently pressed against the perineum, it is surprising how readily the entire pelvis can be explored; it is possible in this way to reach the sigmoid flexure, and to stimulate the peristaltic action of the bowel. I have no doubt that by gentle manipulation in this way, the folds of the colon can be straightened out. In each of the three cases I succeeded in getting a free movement of the bowel on several occasions. I therefore consider digital exploration of the rectum not only an important method of diagnosis, but a certain plan of treatment as well. In these cases injections should be used daily; as ordinarily given, however, but little benefit is derived from them. I have found a lisle thread catheter passed through a cork, the extremity of which is rounded, better than the soft catheter; this is attached to the rubber tube of the fountain syringe; the catheter is passed into the bowel, say two inches, and the cork surrounding it is pressed against the sphincter muscle; after the water begins to flow the catheter is to be gently pressed on up into the bowel. The colon is distended until the pressure

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of the water is sufficient to unfold the bowel. I have found from experience that this method of treatment will usually produce a free movement. Cases of this class require a continuous treatment for a series of several months; indeed, one of my cases was 10 months old before it could ever have been said to have a natural movement of the bowels.

DISCUSSION.

DR. C. G. SLAGLE, Minneapolis, Minn.—This question of the treatment of constipation is one of very great importance to every one who practices medicine. I have had occasion lately to look up the subject of constipation in infants and young children, for use in a paper which I was preparing. I was surprised to find how many different causes of constipation were given in the literature; I had never appreciated before that there were so many factors entering into this subject. As the writer has suggested, some of the important factors are anatomical—for example, the length of the colon. The food undoubtedly is a large factor, but it is far from being the only one. I had not previously appreciated how frequently constipation occurred in infants nursing at the breast. Sometimes this is due to some defect in the mother's milk—as for instance some excess of proteids, or a lack of sugar. I have really had the most difficulty in relieving constipation in those infants under a year old who were nursing at the breast. We can manipulate the food more readily in bottle-fed infants, adding possibly oatmeal or something of the kind. Sometimes we can feed them a little sugar water. I have found that one element in infantile constipation is the dosing of infants with astringents, such as carminative teas. We know that these are all astringents, and that it is exceedingly common to give anise and fennel tea, or to dose the little ones with paregoric, or with castoria.

DR. A. L. LAWRENCE, Washington, D. C.—Such an important subject as infantile constipation should receive full discussion in this Section. In infancy there is often constipation, alternating at times with diarrhea from an excess of proteids, as just stated. In these cases I have used small doses of essence of pepsin—ten or fifteen drops after nursing. One important point that might be mentioned in this connection is the value of massage, together with the use of oil-paper suppositories. By these means the mother can get the child in the habit of having an evacuation of the bowel at a certain time every day. When early infancy has been passed most children are fed almost exclusively on oatmeal and potatoes, and they very naturally become constipated. A lack of fat, especially in bottle-fed babies, is a cause of constipation. These children should be given more cream or butter. All forms of teas should be strictly prohibited. I hope there will be a very free discussion on this subject.

DR. J. A. WORK, Elkhart, Ind.—In connection with what has been said, I would say that I believe tight-lacing about the abdomen is another factor. We all know that in order to give nature a chance to produce a free action of the bowels we must not interfere with peristalsis—the muscular action of the circular fibers of the bowel. The tight bandages so commonly used on infants interfere with this peristalsis, and so give rise to constipation. I believe we should study more carefully the workings of nature. We are apt to want to do too much for her, and pay too little heed to what she can do without us.

DR. E. D. CHESEBRO, Providence, R. I.—I wish to emphasize the statement made by the writer of the paper, that in the treatment of constipation, it is important to look after the quantity of fat in the food. It was pointed out some time ago by Dr. Holt that a certain amount of fat must be passed off in the feces in order to keep the later sufficiently soft. If the food is deficient in fat about all of it may be assimilated and but little or none left for elimination. It is my custom to look after this element, and if the baby is constipated I almost invariably increase the quantity of fat. Usually the results of such treatment are satisfactory. Excess of proteids undoubtedly has a great deal of influence, but lack of fat is a very important element in causing constipation.

DR. EDWIN ROSENTHAL, Philadelphia, Pa.—Professor Jacobi, when lecturing on constipation in children, exhibits the sigmoid flexure of a child, removed ten or fifteen years ago, which is eight or ten inches longer than in the average child. Dr. Jacobi gives this abnormal length of the sigmoid flexure as the cause of constipation in a great many children, and states that for this reason he prescribes the use of a clyster or enema, before giving medicine. He says that it may be from three to five years before such a child's sigmoid flexure becomes of proper length. In these cases it makes little difference whether the food contains high or low percentages of fat. We should, therefore, consider first the anatomy, and secondly the treatment.

DR. HARRIET E. GARRISON, Dixon, Ill.—I wish to call attention to the fact that in nursing babies we are unable to modify the milk very much. If we give very much water it is passed off by the kidneys, leaving the bowel without much water; but if a little saline be added, such as bicarbonate of soda, elimination of the water takes place through the bowel instead of by the kidneys.

DR. R. C. MOORE, Omaha, Neb.—From the discussion of this paper it is very evident that most of the gentlemen here have experienced difficulty in treating constipation in infants. I might say that eight-tenths of the children whom we are called on to see are more or less constipated. Most of us have probably observed that most of these cases of constipation occur in bottle-fed infants. Furthermore, in examining the stools in these children, it will be found that they are not of the normal color; they are decidedly lighter than they should be. These facts should suggest the proper course to pursue. In the first place, if you can feed the child from the natural course, this is the best, but if this can not be done, a wet-nurse should be provided, if possible. If the means of the parents will not allow of this, we must content ourselves with artificial feeding, and must overcome the difference between the mother's milk and the food selected. The gentleman from Washington struck the keynote of this matter when he spoke of the absence of fat in our artificial foods. Old Dr. Meigs of Philadelphia, years ago, suggested the addition of cream to the artificial food, and this practice has proved very useful, and his food is still the standard for artificially-fed infants. He increased the fat in the milk by adding a certain proportion of cream. There is in mother's milk the natural stimulant to the different excretory and secretory organs of the body, and we can, in my experience, supply this artificially by one thing suggested by Dr. McClanahan, and that is by the use of orange juice. If constipated babies having white, lumpy discharges, are fed on orange juice they will be wonderfully benefited. The orange juice stimulates the natural secretion, and instead of the usual light-colored, bird-like discharges, there will be discharges of a natural color and of the proper consistency. In cod-liver oil, according to my experience, we have a most useful remedy in the treatment of infantile constipation. It will not only stimulate the excretory organs, but it will prove conducive to the proper growth and development of the child. Medication, in the way of cathartics, is useless, and, to my mind, injurious. Of course, if, when the baby is constipated, nervous symptoms develop, it becomes absolutely necessary to evacuate the bowel by the administration of a cathartic. At such times it is usually well to give castor-oil. In most instances, however, with careful preparation of the food and attention to the bowels, and the administration of orange juice, very little trouble will be experienced.

DR. LEONARD of Massachusetts—I never like to let an opportunity go by to speak about the feeding of children. About thirty years ago I came to the conclusion that the artificial feeding of children once in three hours was about correct; since then I have thought that three hours was rather too short a time, and that the food should be given in smaller quantity if as often as once in three hours. Attention to this point renders the movements from the bowels more natural, and prevents the evacuation of undigested food of all kinds. I am still of that opinion. I think it is time for us to cease medicating the infant and instead find out what the infant can digest, and the interval which will best suit its needs. Under no circumstances do I find it necessary to resort to any drug or use any mechanical means for the relief of constipation. It is exceedingly important that the food should be proper in character, and also very essential that it should be given regularly. A child will live on good cow's milk, or on milk of very different chemical composition.

Medical Constantinople.—The new medical college approaching completion at Constantinople is the most imposing public structure in the city, even surpassing the new Ottoman Bank. It is located on the Asiatic shore between Scutari and Kadikoi, on an eminence, and consists of an enormous hollow square with eight main pavilions three stories high, and four smaller, all connected with well-lighted corridors. Professors and students live in the second story, and the clinical material is derived from the large military hospital close by. A letter from Constantinople describes the Gulhane Hospital, in charge of Professor Rieder, as a fine specimen of a modern scientific building for this purpose, and the new Children's Hospital as a model in every respect, with a separate building each for diphtheria, scarlet fever, measles, whooping-cough, etc.

HYSTERIA IN CHILDREN.*

BY EDWARD E. MAYER, A.M., M.D.
PITTSBURG, PA.

Hysteria in children was first described by Ranvlin, in 1748. Before him, in 1681, Lepois had ventured to combat Hipprocrates' view that it was a uterine disorder, and heretofore only a female complaint, but he had not gone beyond this. Nor did Ranvlin treat of the subject in a clear manner. It remained for Briquet, in 1855, to show that it did occur in children, and as frequently as in adults. At that time Carter and Brodie had already published their admirable articles on hysteria in adults, but they had ignored its presence in childhood. Since Briquet's time, Bourneville, Baginsky, Tourette, Casaubon, Ollivier, Clopault, Richer, Charcot, etc., have enriched the literature on the subject. To-day it is generally accepted that hysteria is not rare among children, and that as a children's disease it dates from antiquity, as witness the children's crusades, the epidemics of chorea magna, the tale of the Pied Piper of Hamlin, etc. But this acceptance has come slowly. In the early 80's, through the work of Seeligmueller, Henoch and Schaefer, Germany, and in the last decade America and England, have followed France.

Briquet claims that one-fifth of all the cases of hysteria occur in childhood. Jolly confirms this statement for Germany. Putnam, Mills and Taylor agree that it is frequent in America, while Sachs, Burr and Jacobi seem to think its frequency is exaggerated. In this, however, they are in the minority.

It is a fact that the physician of to-day, in this country, is woefully ignorant of such subjects; that in dispensary work, where such cases are most liable to occur, these cases are often wrongfully diagnosed, and that, on account of our want of good statistics, we really have no way of observing its frequency with us.

That the Anglo-Saxon race is less liable to hysteria than other races is not an entirely wrong statement, but it sadly needs modifying. From what we shall say, it will seem that it is not so much the fault of birth, but of the difference in training. It is an undeniable fact that the Anglo-Saxon more than any other race, understands the value and importance of cleanliness, home training, good environment and bodily exercise. To this the slight immunity of the Anglo-Saxon is as much due to the racial difference in emotionality and auto-ideality.

Before proceeding further let us see what the basis of hysteria is. It is a question often asked, but never answered. Still, there is an underlying groundwork to every case. We do not refer to hypotheses. Many of these have been advanced, as that of Janet, that hysteria is due to a weakening of the psychologic synthesis; of Myers, that it is due to a disease of the hypnoid stratum, and of Liebermeister that it is a subcortical disturbance. We refer merely to definite general conclusions on which we can build our ideas of hysteria. They are: 1. Organic alterations are absent. 2. The symptoms are dependent on psychic emotions. 3. The psyche is diseased. 4. Physical disturbances increase the psychic disorder.

An example will illustrate this. A mother is walking with her child, hand-in-hand; the child stumbles and would have fallen had not the mother held her by the hand. The child screams and the mother becomes frightened when she sees the arm hang limp and lifeless. She imagines it has wrenched the arm from its socket; the child cries more and more and a physician is hastily sent for. Every attempt at movement of the arm produces pain; every touch, no matter how slight, evokes a scream of anguish. Yet no fracture, no dislocation, no contusion is noticed, the history of the accident is so peculiar that finally the physician thinks of hysteria. The child's attention is diverted, its arm is then again examined unobserved by it, and behold it can be pressed and touched and moved freely, till the child suddenly observes your actions and again the arm is limp and painful. This is a comon type of hysteric attacks in children, and we can readily see how far our four previous conditions hold. The fall had slightly wrenched its hand, perhaps produced a momentary pain. A child, always excitable, exaggerates this pain, its emotions are aroused, psychic inhibition is lost and the excitation induces a seemingly organic condition.

Such a case, however, can not occur in every child. In what children can we expect it? This leads us to the causes. In the first place our prolix French colleagues have given as causative factors almost everything under the sun. We must recognize the fact that febrile disorders, the various dyscrasias and diatheses, by weakening the constitution tend to promote the inroads of another affection; but they can have but little bearing on the disease itself. DeMussy asserted that he had never seen a case not of chlorotic origin. Reflex causes are but slightly at play in children. Sexual life is not yet formed and, therefore, does not have much importance as an etiologic factor in children. The same is true of trauma. We speak broadly, therefore, and say that anything which weakens the psychic forces or inhibits them favors hysteric onslaughts. In children we can consider this under two phases: 1. Improper education and environment. 2. Heredity.

We do not hesitate to say that the importance of the latter has been much exaggerated. If we run the gamut of all the relatives, paternal and maternal, we can not help meeting with a near or distant member who has shown signs of degeneracy or symptoms of some neurotic disturbance. It is very easy to eagerly fasten on such a history and triumphantly say that it has done it all. Charcot held that arthritic and neuropathic affections are allied, and Grasset seeks to show a relationship between phthisis and nervous diseases. This, to me, but shows how fanciful and far-fetched conclusions have been made.

Habits are formed by imitation and repetition of the acts of the parents. Hysteric parents have hysteric children, because the child is brought up, trained and developed by the parents; unconsciously and consciously, it imitates them and repeats their actions. I have not only observed this but have seen an hysteric child induce a similar attack in its mother. In what other way can we account for the epidemics of hysteria in convents and boarding schools? Example, imitation and improper training are certainly psychic causes sufficient to produce hysteria. If a child is a daily witness of the hysterical attacks of its mother or of the drunken stupors of its father, it does not necessarily inherit their condition, but it is the moral effect, the influence of their habits and teachings that may make it the same.

All the sensations of a child are not only novel but vivid; and their senses become developed through their

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surroundings. They reason and act according to what they see and observe. It takes little to cause them joy; less to make them sad. Now hysteria is simply a discharge of morbid influences along the various motor and sensory paths, and improper home influence and training certainly promotes such morbid states. Other psychic moments are fear or fright. Often the cause of the child's hysteria is fright caused by a drunken father nightly beating mother and child, or fear of a whipping by a stern teacher. I saw a case lately in which hysteric attacks occurred in a child almost every morning. These consisted of convulsive twitchings and contortions lasting about three to five minutes. On investigation I traced them to be fear of going to school. Removal to the country worked a prompt cure. Auto-intoxications, which are of moment in cases of adult hysteria, do not play much of a part in infantile cases.

Lamarck rightly regards habits and influence as being able to modify a child's organic structure. The brain is a passage-way as well as a storehouse. It receives, but more than that, transmits. All our impressions stored there are capable of becoming sensations, perceptions, ideas, emotions and finally acts. The volitional centers are little developed while the imaginative ones reign supreme.

Hysteria in children is very often monosymptomatic. One part of the body only is paralyzed or painful, a circumscribed spasm is found, not a general one, etc. In addition the well-known hysteric stigmata, the sensory disturbances, the anesthesia and the hysterogenetic and hysterofrenatic zones are generally found wanting. Severe epileptoid convulsions are also rare in children. The symptoms that are found are, however, generally severe and drastic in character, and never so slight and variable as found in the adult.

Inasmuch as we largely have monosymptoms in hysteric children, a systematic presentation of the symptomatology is impossible. All that can be attempted is to present the most important and frequent symptoms and symptom-complexes.

Hysteric symptoms are both subjective and objective. In every case we find some modification of psychic phenomena or alteration of personal characteristics. Mere presence of emotional conditions in a child, however, does not constitute hysteria. This error was made by the French school, whose members made the psychic stigmata of degeneration symptoms of infantile hysteria. Another error is to confuse hypochondriac symptoms with hysteric ones. The depressed, moody, self-conscious hypochondriac may be hysteric also, but not always. Hysteric persons are never afraid of disease, as are hypochondriacs, nor do they center all their thoughts on their mental and physical condition, but are rather careless, forgetful and varying in disposition.

It is evident to all that no single psychic symptom can be said to belong to one disease. Only symptom-complexes can enable us to recognize conditions and assign causes. For this reason we often find that hysteria is associated with mania, melancholia, hypochondria and neurasthenia. In the latter, the psychic condition is strikingly different from that of hysteria. In neurasthenia, the machine stops because the power has been withdrawn; in hysteria, because it is acted against by some external agent. When both actions occur conjointly, we have a confused symptom-complex which is hard to diagnose.

Hysteric children are generally precocious and egotistic, impressionable and emotionally irritable. They react to the least excitement, may become suddenly moody and sad without cause, reject their little friends, mope for hours, or they will suddenly burst out crying, break their toys and stamp and rave. They are generally capricious and have depraved tastes—pica hysteria. Some are so stubborn as to be unbearable, others so violently affectionate as to be disagreeable. The longer the disease lasts, the more does the child concentrate its mind on itself, the greater and more varied are its bodily ailments. Suggestion is the field they wander in, and more and more does imagination rule. The will weakens, abulia and metabulia result; as Paget aptly said; "it is not 'I can not' that dominates them as much as 'I will not.'"

In cases of hysteria in childhood we find flaccid paralysis, often with contractures. Paralysis of a single muscle or of all four extremities is rare. It is generally a paraplegia or paralysis of a single limb. The face is rarely involved in the paralysis. Hysteric contractures present two important characteristics: 1. They are very marked, more so than in organic cases, resisting all passive movements, but relax in sleep or under chloroform. 2. They are painful to the touch; the joints being especially sensitive. The knee-jerks are rarely increased, and thus present a differential point to many organic cases.

Hysteric paralyses at once impress one by their variability as to the degree of paralysis; relapsing and improving; changing in location and integrity, without assignable cause. Muscular atrophy may occur, resulting from the inactivity of the part. When ankle-clonus is present, the thigh generally takes part in the motion, the clonus in fact being due to contraction of the calf muscles (Gowers).

The gait resulting from functional paralysis of the lower limbs is peculiar. It is jerky, not halting nor hesitating, the steps taken being small and noticeably forced. There is no spreading of the legs, as in organic inco-ordination, no high-step with foot-drop, as in infantile paralysis and multiple neuritis, no scythe-like motion as in organic hemiplegia with the turned-in toes catching on the floor at each forward step. The muscles impress you as being unnecessarily used rather than being useless. The anesthesia of hysteria is quite different from that accompanying organic lesions. It appears in the latter in longitudinal stripes parallel to each other; grouped anatomically. But in hysteric cases it is found in circles perpendicular to the long axis of the limb, or in irregular patches, a physiologic grouping, hence the names, "stocking" or "glove type," given to hysteric anesthesia. It is true the first may occur in locomotor ataxia and multiple neuritis, and the second in syringomyelia and beri-beri, but very rarely and then gradually shading off. Patrick says that the limiting circle of hysteric anesthesia changes even within a few minutes, so that an examination a short time after a previous one will often give results differing one to two inches from a previous one. In children, hyperesthesia is perhaps more often found than anesthesia.

Astasia and abasia are often found in children. These occur much more often in children than in adults. These names apply to those conditions in which the muscles of the legs can be used, when sitting or lying down, but are unable to be used for walking or standing. They act as if they had forgotten how to walk or stand. We have a spastic, a paralytic and a choreatic form of astasia-abasia.

Another hysteric paralysis of childhood is aphonia. It is characteristic that they are able to cough or sing while not being able to speak. Hysteric stuttering is also often observed. In a case seen by me recently, the child would introduce l's into her words wherever possible, e. g., "I don't feel very well," she pronounced, "I lon't feel vely well." It was only after careful observation that I excluded aphasia and noticed the peculiar form her speech took. Hysteric blepharospasm is often observed in childhood.

We often observe choreic movements in hysteric children. I observed a child last February whose father had been stricken with hemiplegia. The child had been in the room at the time and, for weeks afterward, on every attempt to walk, her limbs became unsteady and trembled, until the child sat down again. It is probable that the paramyoclonus of Freidrich, and the chorea electrica of Henoch are hysteric diseases, similar in nature.

Facial grimaces and conditions similar to convulsive tic are often seen in hysteric children. The graver forms of spasms and hysteric attacks, as described originally by Charcot rarely are, if ever, seen in children of this country. Bruns in Germany claims that they occur as often in children as in adults. In all such hysteric attacks consciousness is rarely entirely lost, and suggestions offered during attacks are often followed. Epidemic cases are more rare than in former centuries, but still occur in boarding schools and pensions, and in isolated villages. A particular danger of the recent revival of hypnotism lies in the production of such epidemics. Hysteric coughs and tachypnea are also often observed in children's hysteria. Although sensory disturbances are rare in childhood, they are occasionally observed.

Neuralgia occurs rarely in children, except the hysteric joint neuralgias. Pressure causes pain while forcible apposition of the articular surface does not. There is not deformity, no temperature elevation, while the joint is freely movable under chloroform. Ocular disturbances of hysteric origin are so difficult to diagnose in children, when they occur, which is rarely, that they need not be discussed.

Digestive disturbances, anorexia, and vomiting may occur. Incontinence of urine is also often of hysteric origin. When necessary to exclude epilepsy, the different stigmata of this disease, the involuntary micturition, biting of the tongue, idiotic faces, peculiar aura, elevation of temperature, etc., and the stigmata, etc., of hysteria will furnish a differential diagnosis in most cases.

Some points to which I called attention in a previous article are important ones, not sufficiently emphasized: 1. In hysteric attacks the patient resists opening the eyes, while in epileptic ones he does not. 2. In the former his face is flushed and cyanotic, in epileptic attacks, pale and colorless. The peculiar chattering of the teeth in hysteria should also be looked for.

A case that illustrates the difficulty of making a diagnosis is the following one, which I saw this last winter. The notes taken at the time read: Mary M., aged 13, came to the clinic on December 13, with her father, to get treated for her fits. She said, and so did her father, that she lost consciousness daily for from ten to fifteen minutes. She has never bitten her tongue nor micturated during these attacks. On the other hand, her face does not flush nor become cyanotic, and she has hurt herself in falling. She says it seems as if something pushes her from behind and then her limbs give way and she falls. She does not menstruate as yet, is well-built, no hereditary taint, but seems neurotic. She, however, has had bad home surroundings—her mother drinks and whips her. She is very restless and excitable, and is not over-intelligent. Her father insists on questioning that she loses consciousness during the attacks. A diagnosis *in dubio* was made till further examination. Dr. Diller saw her later and, wishing to study the case, she was sent to the General Hospital. Here she had several attacks, occurring irregularly at indefinite times. She seemed to vary in them so much that the resident physician's report was conflicting, once giving a report of an attack of complete unconsciousness, foaming at the mouth of one to three minutes' duration, then of attack with incomplete unconsciousness with inability to speak. Finally she was seen in an attack during which she had crawled under the bed and from which attack some ammonia to her nostrils aroused her immediately. A diagnosis of hysteria was made and appropriate treatment instituted with gratifying results.

False diagnosis in hysteria occurs in two ways: 1. A severe organic trouble—above all others, those of the nervous system—may be falsely regarded as hysteric. 2. An organic trouble may be thought to be the cause of the symptoms when hysteria is present. When hysteria complicates organic trouble diagnosis is doubly difficult. This is especially liable to occur in hysteric children, yet hysteria is the last thing thought of by most physicians when examining a child. The most important requisite for a diagnosis is, then, complete general and special medical experience and careful observation; above all else it is necessary to at least think of the possibility of infantile hysteria. An important point in this regard is to decide what we would call a symptom of hysteria. My opinion is that all symptoms that can also be produced voluntarily, that may be simulated, may be hysteric. In other words, symptoms which are clearly organic do not occur in hysteria, as bladder paralysis with cystitis and pyelitis, decubitis, muscular atrophy with D. R., etc.

Hysteric patients always exaggerate their trouble; pain makes them crazy; they yell and fume in the wildest manner, more like brutes than human beings. When we also remember the unanatomic grouping of symptoms, the involvement of only certain muscles, as for instance in hysteric paralysis of the vocal cords, when speech but not singing is impossible, and the obvious psychic influence at play, we have a group of facts which renders it easy to decide on the hysteric nature of an attack. Just as hard as it is to diagnose the hysteric or organic nature of an affection in some cases, is it to distinguish simulation from hysteria. The prognosis is much better than in older persons. The younger the child, the easier to cure. This results from the fact that they are more easily influenced, that their psychic nature is more easily acted on. From this it can be seen that the treatment is moral. For psychic disease, the treatment is psychic. Make the parents realize their responsibility and the effects of their influence: no feebleness nor submission to the caprices of the child, but not too much vigor and no corporeal punishment. Too much severity is as bad as too much love. Unfortunately, it is just in these cases that the parents are unable to treat their children as desired. For this reason, isolation is necessary. The child, brought to a hospital, realizes itself alone; it can not call on weak parents to act against the injunctions of the physician, finds it will not get home until cured, the new surroundings, a strange phy-

sician—all these factors will work wonders. Stop all visits, even letters.

In hysteria we have marvelous cures or no cures. For this reason the family physician, if he fails to take the upper hand from the first, or if he allows the mother's word to have any influence, will not succeed in his treatment. Unsuccessful, at his or the mother's suggestion a specialist is called in. The latter is firm, isolates and cures. There are two methods to be used: 1, ignoring the patient completely; 2, allowing him no time to be sick. The latter method is the best. As soon as the patient enters the hospital start your treatment; keep him on his feet doing something till he falls asleep, and continue unceasingly till cured. If astasia-abasia is present, set the child on its feet and tell it to walk, or place it in a suspension apparatus and suddenly, without warning, allow the child to fall upon its feet; in hysteric aphonia pass a sound and command it to talk after removing, or if this does not succeed, to cough, etc. In the other method allow no one to speak to the child; let it be ignored until we might say the symptoms die out from sheer neglect.

In addition all methods used in functional cases can be tried. Massage and electricity, hydrotherapeutics and careful dieting are of benefit. When other diseases co-exist they should be counteracted by appropriate remedies. The copper salts, gold and sodium chlorid, the valerianates, sumbul, turpentin and other drugs used in hysteria benefit only by suggestion, as do the mechanical methods previously spoken of.

As to prophylaxis, it is of great moment. Children of neurotic taint should be trained away from home under good moral restraint. Public schools are better than private ones, for in them they are not so liable to become the victims of the endemics of hysteria seen in convents and boarding schools. The amount of mental labor should be carefully regulated, not forgetting, however, that excessive physical exercise is just as injurious. It is unfortunate that camp meetings and spiritualistic séances, which are the cause of many cases of hysteria, can not be prevented. Intelligent parents should be taught the value of good discipline, careful education and self-control. The physician should recognize the advantages of suggestion, and should be on the lookout for manifestations of hysteria. Splints, casts, and embrocations have been many times applied to hysteric joints. Tenotomy has been often proposed for hysteric contracture, or excision for a hysteric tumor. What enthusiastic charlatinism has done, what Mollinger and Kneipp, Lourdes and Tries have done, physicians can likewise accomplish, and the people should be educated to this standpoint.

DISCUSSION.

DR. C. G. SLAGLE, Minneapolis, Minn.—I can not believe that idiopathic hysteria is so common in children under 7 and 8 years as it has been represented to be. As a symptomatic affection hysteria is not, however, uncommon. In children it is interesting from the point of view of diagnosis. I have myself made some very grave mistakes in failing to recognize the underlying disease. Wood, I think, has most graphically defined idiopathic hysteria as an "ebullition on the surface of life whose depths are undisturbed." I once produced a form of hysteria in a neurotic girl suffering from a mild form of typhoid fever, and it taught me a lesson. I did so by giving her strychnin. She became very hysterical, and I did not discover for a while that it was the strychnin that I was giving her for her weak heart that was responsible for the hysteria. Hysteria in children is less frequent than it has been represented to be. It is important to detect the underlying conditions.

DR. ROSA ENGELMANN, Chicago—I do not know any more difficult task than to make the diagnosis of hysteria in children, especially when there is an absence of the usual stigmata. I recall a case in which all the stigmata were absent and it was absolutely impossible to make the diagnosis until I accidentally saw the child in convulsions. The diagnosis had been made of epilepsy previously by other physicians. I happened to see that the child did not hurt itself; I noticed also the character of the convulsive movements, and that in a few moments she was able to get up and walk about. She was placed under treatment, and for six months she had no hysterical attack. Then her father whipped her one day, and immediately the hysterical attacks recurred. The child is still under observation. I have another case in mind in which it was also difficult to make the diagnosis. Some six months previously I had seen the child with what I supposed to be a hysterical hip lesion. On consultation, tuberculosis had been excluded. Some six months later the child had entirely recovered. But subsequently there was an attack of polyuria, the child passing thirty pints of urine daily. The polyuria was so excessive that there was no rest at night, and it was not diminished by medication. Six or seven consultants were called. Finally a blood examination was made, and the malarial plasmodium found. The question then occurred to me: Was the first illness a hysterical joint due to the toxemia of malaria?" I am now able to state that after an interval of six months this child only passes from six to ten pints of urine daily, and that no sugar has been found in the urine, and that she looks robust and well. This child is of a decidedly neurotic temperament.

DR. G. M. BLECH, Chicago—I wish to congratulate the essayist on his exceedingly scientific and valuable paper. It is very difficult to make the proper diagnosis in diseases of the nervous system, particularly in children. There is enough difficulty in adults in making a correct diagnosis between organic trouble and a neurosis or a psychosis. In children it is much more difficult. Very frequently the pediatrician is almost unable to make a correct differential diagnosis, excluding the presence of organic central or peripheral lesions, and differentiating between a case of hysteria and neurasthenia.

I wish to add a little experience I had in my clinic some three months ago. A little boy about four years of age was brought in with aphasia. He could not speak a syllable. He had been able to speak when about 2 years and 3 months old, but at that time he had been locked in a dark room by his playmates, and ever since then he had not spoken at all. An eminent physician who was present at the time to which I refer, thought of central nervous disease as the cause, and another suspected tuberculosis. In spite of a most thorough physical examination nothing definite could be elicited, and therefore by exclusion a diagnosis of hysteria was made. The mother was uneducated, and hence I instructed her merely to use mild hydropathic measures, and told her to be kind to the boy. In two weeks she returned, and in the presence of several physicians the child pronounced a few words, such as "papa," "mamma," "water," and "walk"—in other words those in which the nasal sounds were absent. After a few minutes' practice it did something better, and after three or four weeks' further treatment it was much improved. It is now doing well. The case is of interest because of the difficulty of diagnosticating aphasia when due directly to hysteria, as in this instance.

DR. HARRIET E. GARRISON, Dixon, Ill.—My experience in a small town would lead me to think that there is a great deal of hysteria among children. I know I have had at least eight cases in the last two or three years. One patient came under my care first when she was a girl of 7 years. She had been under the charge of several physicians. One of these—a physician who stands very high in the profession—had treated with carbolic acid spray and tincture of iron, an exudate occurring in the throat every time she had an exacerbation of her trouble. His diagnosis was "diphtheria," in spite of the fact that it was necessary to treat her for this complaint again and again at intervals of a few months. When she came under my care I soon found high temperature, 105; exudate in the throat and generally a bright scarlet rash on the flexor muscles of the forearm, but once the rash covered the whole cutaneous surface and so closely simulated scarlet fever that I should have given a diagnosis of this disease had this been the first attack after she came under my care. A few warm baths, with acetanilid for the high fever and nerves and a seidlitz powder caused the disappearance of all disease, and the fourth day she was again riding her pony. Fancied abuse of this pony by some student tourists had caused the anger which brought on this attack. I found these attacks came after nervous excitement, and I then diagnosed the affection as a neurosis. In spite of all that I can do there are still occasional attacks, although her will is gradually gaining control. She has been under my care the greater part of the time for thirteen years. Not more than two months ago I saw an attack of stuttering and hysteria in a young boy. Before he left my office he was able to speak better, so that the neurotic condition was evident. I have under my care a woman who has hysterical attacks which are the

result of taking strychnin. It took me about six months to find the true cause of the trouble, and then I discovered that every time she took strychnin in 1/60-grain doses a convulsion followed the first dose. After the strychnia had been discontinued these convulsions entirely disappeared.

DR. C. G. SLAGLE—The best of all treatment for hysteria, so far as I know, is hypnotism, and I have tried all forms of treatment.

DR. HARRIET E. GARRISON—The best of all treatment for hysteria, in my opinion, is teaching the parents to discipline their children as soon as they are able to know anything. If this were done there would be much less hysteria.

DR. EWING, Salt Lake City—I have had a number of such cases in children, and I have threatened them with hypodermic injection. Usually this threat has been sufficient to effect a cure.

DR. ED. E. MAYER, Pittsburg, Pa.—The remarks made go far to prove that hysteria in childhood is frequently observed in America, notwithstanding statements of Sachs and others. The classification proposed by Dr. Slagle, or idiopathic, simple and symptomatic, does not strike me as either scientific or adequate. Idiopathic is a term applied when the cause is unknown, and should be relegated to the past as having no place in scientific nomenclature. In cases of hysteric joint disease, the important part is to exclude organic disease. The diagnostic points I have given in the paper should be of service. I spoke there of the absence of temperature elevation, absence of inflammation *around* the joint—but if present, it is found extending upward and downward from the joint. Then again, by distracting the attention of the patient, it will be found that the articular services can be rubbed together without causing pain, which would be impossible in organic disease.

I consider hypnotism the worst thing a physician can use in infantile hysteria. Hypnotism is merely a form of induced hysteria and is always dangerous in children. Suggestion, however, may be of benefit if the child is of a sufficient age to receive it. But hypnotism is even more harmful than the spiritualistic séances and camp-meetings which are productive of hysteric boy-preachers and the like.

The most important part of the treatment is isolation and rest and I would ask you for your own protection to isolate every hysteric child if you expect to cure it.

CONVEYANCE OF INFECTION THROUGH THE MEDIUM OF THE EAR SYRINGE: A REMEDY.*

BY FRANK C. TODD, M.D.

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MINNEAPOLIS, MINN.

Inflammation of the middle ear may result from various affections of the nose and throat or from infection externally, and may terminate in recovery without treatment. With modern treatment many cases undergo a speedy recovery, running a course of from a few days to two months, while others under similar conditions and with the same treatment result in a most violent inflammation involving the mastoid and surrounding structures, or lapse into chronic suppuration.

The variation in severity and chronicity is in a large degree due to the character of the bacterium or bacteria causing the infection. "Whether the disease shall promptly run its course or change into the chronic form depends upon the continued activity of the germs present or upon the gradual dying out of the first culture and implantation of new varieties upon the now affected membrane." (C. R. Holmes.)

The germs commonly causing inflammation of the middle ear are: the diplococcus of pneumonia, staphylococcus pyogenes albus and aureus, streptococcus pyogenes and the bacillus pyocyaneus. (Holmes.) These and other germs found in the ear vary greatly in virulence. The staphylococci are for instance less virulent than the streptococcus pyogenes, and the most destructive process results from a mixed infection caused by the bacillus tuberculosis and the streptococcus pyogenes.

In the treatment of these affections it should be our aim, therefore, to prevent added or mixed infection, and, as in the dressing of surgical cases, it is necessary to use clean instruments.

The syringe commonly used in the routine treatment of these infections is a piston syringe. In its use the point is immersed in the solution and the cylinder filled by suction, the point then touches the ear, from which there is such a profuse discharge that a part becomes adherent to the point, the syringe is removed, to be used again on the next patient. In sucking up the solution this time some of the pus adherent to the point is drawn into the cylinder to be forced into the ear of the next patient. The leather washer becomes contaminated and makes a good culture-medium which can not be boiled without being destroyed. Or the pus may remain on the point to directly infect another patient.

In order to prove these surmises the writer made cultures from the points and interiors of several ear syringes and demonstrated the presence of various bacteria, including the staphylococcus pyogenes aureus and albus, streptococcus pyogenes and bacillus tuberculosis, and became convinced that the ordinary ear syringe is a dangerous and dirty instrument, capable of implanting new and mixed varieties of infection on a fertile field.

An ear syringe, to be aseptic and practicable, must meet the following requirements: 1. The point which comes in contact with the ear must be capable of sterilization, and so constructed that it can be easily removed. 2. There must be no suction through this point.

The fountain syringe answers these requirements, and in my office I have used, for about two years, a metal tank, suspended from the ceiling, which rests against two steam pipes. These pipes keep the water at a proper temperature during cold weather. With this I use small glass points, and change them after using in a septic case. The fountain syringe is, however, open to the objection that the current can not be regulated at will, and, accordingly, Meyrowitz has made, at my suggestion, a bulb syringe which has a valve at each end. The solution is drawn in at one end through a rubber tube so large that the bulb is quickly filled. The rubber tube at the other end is smaller and terminates in a point fitted with a shield to protect the operator from the return flow. The point can be unscrewed and sterilized.

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DISCUSSION.

DR. L. C. CLINE, Indianapolis, Ind.—I do not see the point the Doctor makes in reference to putting the syringe in the ear, nor the necessity of introducing the point of the syringe into the ear sufficiently to infect it. It is my practice to hold the point of the syringe away from the ear so that it never touches the ear at all. I hold it away from the ear and steady the syringe with the point of the finger of the other hand. By keeping the syringe away an inch or two from the ear we can wash it as well or even better than if we put it in the ear.

DR. A. R. BAKER, Cleveland, Ohio—For several years I have done away with all forms of piston syringes in the treatment of the ear. I simply use the little bulb ear and ulcer syringe that is commonly to be found in the drug stores. This instrument can be boiled and sterilized, and I never find any difficulty from using it. I can remove a plug of cerumen in one-third of the time required with any other instrument.

DR. B. ALEXANDER RANDALL, Philadelphia—This subject of aseptic syringing is an exceedingly interesting one. There are many who regard it as absolutely unsurgical to use a syringe at all, but I am by no means such a one, for I use it habitually, and I am sure it is with most satisfactory results. Every improvement in this direction is of considerable importance. Much can be done by the avoidance of any contact with the infected tissue, and if we will rest the syringe on the thumb of the hand holding the ear we can often avoid infection. Yet any one who is a teacher and has his instruments used by others in the clinic may have them infected by others even though he be very precise himself. I myself prefer a small syringe that does not have the element which is present in this and some other instruments. I refer to the shield to ward off the return flow. It seems to me this prevents much of the precision with which the instrument should be used since it cuts off the view. I like a small tip and can then carry it to any necessary depth in the canal with full view, as in tympanic syringing. But every measure which tends to make syringing a safe as well as efficient procedure is of importance.

DR. C. R. HOLMES, Cincinnati, Ohio—While it is true that men like Dr. Randall and Dr. Cline, careful men who are expert, will be able to use their instruments with sufficient care, an instrument that is in universal use must be such that those who are not expert and careful can use it without danger of infection. The objection urged by Dr. Randall, that you like to have your point so you can see just where you are going, is a good one. When you wish to syringe out cerumen, for instance, it is better to have it arranged so you can syringe between the plug and the wall, and under such circumstances naturally the syringe must be contaminated. It is unfortunate that our instrument makers do not make the same kind of packing as the German instrument makers. I have brought over instruments from Germany with the reddish composition packing, and I have boiled them repeatedly, but when they were finally played out I could not get as satisfactory packing here. The point of having an even temperature, if that can be arranged successfully, is certainly very desirable. In cold weather especially we are likely to get the water too hot or too cold. For middle-ear inflammation I use the water at a temperature of 110 to 120, and even 130 F. I have found that water at that temperature is very soothing. Generally 120 F. is as high as may be used conveniently.

DR. F. C. TODD, Minneapolis, Minn.—In regard to the point Dr. Cline mentioned, I think Dr. Holmes answered that question satisfactorily. We can, if we take the pains, keep from touching the ear in a great many instances. However, we are very likely to touch it even when we are extremely careful, if the patient moves. The fact that cultures of the various bacteria mentioned were obtained from the ear syringes of various aurists who allowed me to examine their syringes would tend to show that many are unable to keep their syringes aseptic. I do not like to shove the syringe in the ear, but I do like to get it close enough to use it with effect. Students are especially in the habit of putting the syringe right up against the ear. As to the point mentioned by Dr. Randall, in regard to the shield, I will state that the shield can be removed. I often use a swift current in chronic cases, especially when there is a large quantity of cholesteatomatous material present, and then we can do much more with the syringe than by picking at it with instruments. The return flow then gives considerable trouble unless you have a shield to carry it off. Another advantage of the syringe, which I did not mention in the paper, is that we can keep right at work with the bulb without turning around to fill the syringe as with the ordinary syringe.

AUTOMATIC DRAINAGE OF NORMAL CAVITIES.*

BY WILLIAM JEPSON, M.D.

SIOUX CITY, IOWA.

It is not my desire to enter into a consideration of the relative merits of capillary and tubular drainage, when it becomes necessary to conduct undesirable liquid products from cavities. Suffice it to say that each will at times find a field of application peculiarly its own. There can be no doubt that when large cavities, i. e., peritoneal or pleural, or hollow viscera, i. e., gall or urinary bladder, are to be drained of considerable quantities of liquid, tubular drainage—either by means of glass or rubber—with few exceptions will offer the ideal method. The advantages of tubular drainage are briefly stated: 1, that by this means the product sought to be removed may be conveyed through the dressings applied, so preventing soiling of them, which is certainly of much importance in cases in which contamination of the wound would be undesirable; 2, that the discharges may be efficiently withdrawn from the containing cavity, although often necessitating the more or less constant attention of a competent nurse, as when used in the peritoneal cavity in aseptic cases.

Some of the disadvantages are that the fluid which it is sought to remove will only find exit through pressure exercised on it from within, or through overflow, or else by removal through aspiration, by means of the usual long-nozzled syringe or other device, as generally employed, and if this is not in the hands of a competent attendant, infection is likely to follow. This latter objection is vital when it is not possible to leave the case in the care of a competent nurse, as sometimes happens where cases have to be operated on in their homes, remote from such advantages.

To overcome these objections I have for some years employed a device which automatically removes or siphons the cavity empty of its contents. It consists of a glass chamber, to one end of which is attached a rubber bag to receive the discharges, and to the other end is attached a rubber tube for connecting with the cavity to be drained, either through the intermediation of a rubber or glass drainage-tube, as may be elected. The glass chamber is nearly filled with sterilized water, and then suspended at the side of the bed where the patient is confined, or suspended at the side of the thorax or limb in draining the thoracic cavity or bladder in ambulating cases. The water in the glass chamber gravitates into the receiver, and as it does so creates a vacuum, which aspirates the liquid from the cavity desired to be drained.

To me this method of drainage has found a field of usefulness in draining the pleural cavity of purulent contents, by keeping the cavity comparatively free from purulent accumulations and preventing the ingress of air, thus permitting the approximation of the parietal and pulmonary pleura and facilitating the process of repair. In using this method for drainage of the pleural cavity, I make use of an ordinary rubber drainage-tube long enough to reach the most dependent portion of the cavity, which has a rubber shield, applied to prevent the ingress of air.

In draining the gall-bladder or urinary bladder after cystotomy, I employ the method that I have already described as used in draining the pleural cavity. In the event of drainage being desired after the patient is able

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to be about, the apparatus is strapped to the body as already stated.

In using the same to drain the peritoneal cavity, I make use of the ordinary glass drainage-tube generally employed, which has a glass tube fitted within it, by means of which the fluid is siphoned away as rapidly as it accumulates within the drainage-tube proper. Where large areas have been denuded, I combine gauze drainage with this, bringing the end of the gauze up into the lower end of the drainage-tube. I believe that in this class of cases this method of drainage is most marked in its efficacy, owing to the fact that it acts continuously and cares for itself, thus obviating the constant attention which would otherwise be necessary on the part of the nurse, and where the risks of infection through incompetence in aseptic technic on the part of careless or ignorant attendants is considerable, as must frequently be the case, its advantages seem to me invaluable, as infection is absolutely guarded against.

While the principles involved in this method of drainage are well recognized and not new, the application of the same in the manner that I have detailed has not hitherto been made use of to my knowledge.

DISCUSSION.

DR. J. B. BULLITT, SR., of Louisville, Ky.—The device proposed by Dr. Jepson is certainly to be desired, provided it would work. I have experimented with a somewhat similar device myself and am prepared to say that it would not work in practice, and if it would, it would require a condition which the device is intended to prevent—the accumulation of fluid in a cavity to be drained under a certain amount of pressure; otherwise the siphonage would not occur until this pressure was supplied from behind, which would preclude using this apparatus in conditions where it would be desirable to use it as in suprapubic cystotomy. This apparatus would not be sufficient. It would presume that you could occlude this entrance and make it air-tight, which is difficult or impossible. The same would be true of all operative wounds. Unless an apparatus of this kind be operated with an artificial reservoir to work the siphonage apparatus, it is impossible to make it work. I have seen such an apparatus work for days at a time by means of an artificial reservoir of which I speak. The time can be graduated. This apparatus was devised by one of our Louisville surgeons, Dr. Chenoweth. I do not claim any priority for him, for perhaps we might find several hundred years ago some other surgeon might have done that same thing—but Louisville has done it again!

DR. FRANK WARNER of Columbus—I think that the gentleman has produced an apparatus that is very ingenious in its construction. Yet at the same time in one of the places in which he suggests its use, a very much better means of drainage is iodoform gauze, or the ordinary glass or rubber drainage-tube. I think we have been too much prone to drain, instead of closing our wounds. Yet while a large number have to be drained, we could use iodoform gauze in a vast majority of cases.

DR. D. S. FAIRCHILD of Clinton, Iowa—Referring to iodoform gauze, it has not been my experience that it serves well for drainage purposes. All who have drained chest cavities have been really inconvenienced by the constant soiling of dressings, and if this arrangement suggested by Dr. Jepson will work, it will certainly be a convenience, if nothing more.

DR. R. C. DUGAN, Eyota, Minn.—I rise to second Dr. Fairchild's remark as to iodoform gauze not making good drainage material. In doing emergency work I have used nothing but gauze, and I have come to the conclusion that unless it is wrapped in a rubber tube it is a first-class thing to stop drainage in pus cavities. The gauze very soon becomes filled with fibrin and makes a splendid plug.

DR. J. B. EAGLESON of Seattle, Wash.—I would state that the instrument referred to was described by Dr. Keen of Philadelphia, and was a modification of one by an English surgeon.

DR. JEPSON—In closing the discussion of my paper, there is little for me to say, except in reply to Dr. Bullitt's statement that the means which I employ in draining normal cavities will not work. I am surprised to learn that the doctor is so well acquainted with its inutility, as I do not understand that he has ever employed the method. His opinion is certainly at variance with my experience, as I have by this method drained the peritoneal cavity in the instance of tubercular peritonitis for sixteen successive days, with no attention on the part of the nurse other than emptying the receiving chamber when it was filled.

There is only one condition which can prevent the proper working of the method and that is the entrance of large quantities of air into the cavity to be drained; but as entrance of air can only take place about the drainage tube, it certainly occurs very rarely, if the wound is properly dressed.

ANATOMIC VARIATIONS OF THE NASAL CHAMBER AND ASSOCIATED PARTS.*

BY M. H. CRYER, M.D., D.D.S.
PHILADELPHIA.

No man who spends any considerable portion of his time in the study of practical anatomy, i. e., actual dissections, can fail to note how great is the number of anatomic variations he meets. So common are these variations that it can not be exactly said which is typical normal anatomy, and which are the anatomic variations. In plain words, anatomy is not a study to be classed among exact sciences. I do not mean by this that there is not such a regular basis of anatomic science that safe anatomic rules can not be made, but the more closely we study the subject the more variations as to details we are compelled to record. To be sure, given the mandible of an animal, a femur, or even a tarsal bone, the nature of associated bones, their size, positions and forms can be deduced, and by further study even an entire animal can be reconstructed. Admitting this, however, there are still as many variations in the internal anatomy as there are differences in the external appearance. Especially is this true in the anatomy of the human head. This special regional anatomy is modified by age, disease, occupation, climate, race, and many other conditions.

The skull consists of bones of both cartilaginous and membranous origin. In the fetus and infant the bones are soft and yielding; they receive deposits of calcific material until the bones become harder and harder as age advances. In the upper and lower jaws there are constant changes caused by development, eruption, and the loss of the teeth and the alveolar process.

Disease causes anatomic changes in the bony structures as well as in the other tissues of the body. In some disorders of the nutritive system the bones may not become incorporated with the full amount of calcific material, which would have the effect of leaving them soft and yielding; or, on the other hand, an undue quantity of calcium salts may be incorporated into the bones, with the opposite effect of making them hard and unyielding, thus modifying the physiologic functions that should take place in and about them.

Occupation will modify the general shape and character of the face and head, especially in youth. Those who are studious and pass an indoor life will have more delicate development of the face, with a larger braincase, than those who are brought up with a laborious outdoor life. The mastication of coarser foods will develop the muscles of mastication and their bony attachments. Numerous other factors might be cited to show the influence of personal habit on the course of anatomic development.

Climate and its consequent environment has great influence on modifying the development of the bones of the head, as is demonstrated in the different formations of the skulls of the great races of the world.

There are also great variations in the shape, size and

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

markings of one side of the face from the other in the same individual. In bilateral bones, such as the frontal, sphenoid, vomer, and lower jaw, one side is generally found to differ from the other. This being the case it will be readily understood that the internal openings and spaces, such as the mouth, the nasal chambers, and the orbits, the maxillary, frontal and sphenoidal sinuses, the ethmoid and other cells, will differ accordingly.

The density of the bone varies also in different persons and in different periods of life in the individuals.

The illustrations I present herewith are made from my own dissections. I wish to apologize for showing

Figure 1.

a few that have already been published; they are used on this occasion to demonstrate new points or to more fully establish points that I spoke of before this Section two years ago.

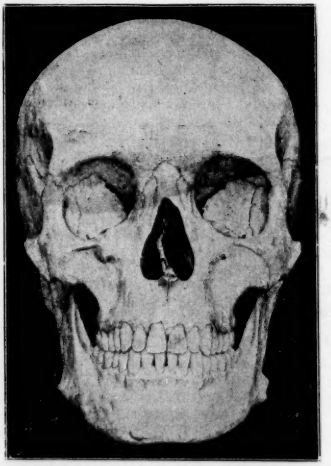

Figure 2.

In order to thoroughly appreciate the delicate symmetry and shades of differences which occur in the construction of the anatomy of the face, it is necessary first to study those skulls and bones that are considered typical at various periods of life, and to give some idea of typical bones I have introduced the following:

Plate 1 is what might be termed a typical skull of an adult person showing perfect occlusion of the teeth.

Plate 2 gives a front view of the same skull. These

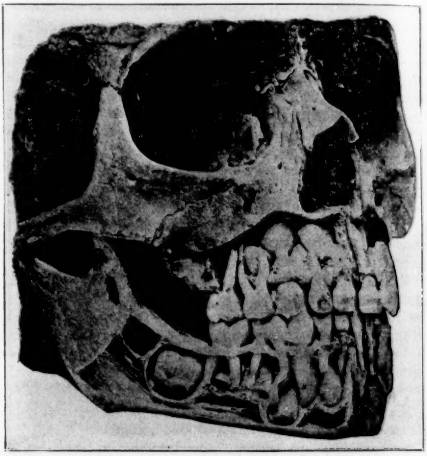

Figure 4.

two slides present an almost ideal anatomy of the external bony structure of the face. There is but the slightest variation of the two sides. It may be noticed that the upper right molar stands out slightly more than the left. The septum of the nose is seen to be deflected in the same

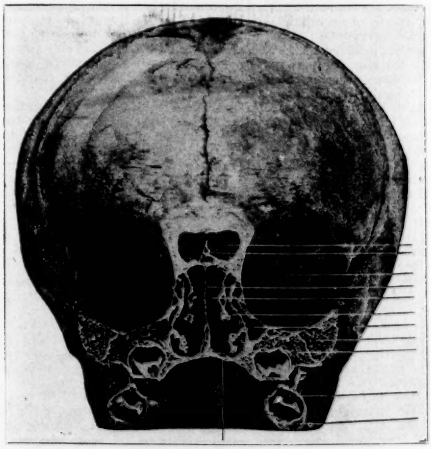

Figure 5.

direction, and on examination of the internal structures of the nose it is found that the bulla-ethmoidalis is enlarged on the left side, projecting toward the concavity of the septum. It may be taken as quite a constant anatomic law that when the mouth, palate and dental arches are bilaterally symmetric, the outer cranial

structures exhibit a like condition; even more, this bilateral symmetry will be found to extend throughout the body. However, this law, as all others relating to anatomic science, is open to exceptions.

Plate 3 (Fig. 4†) represents an interior lateral view of the skull, before published. It is now shown to draw attention to the close relations the upper teeth have to the antrum and the floor of the nose.

Plate 4 is taken from a skull about 6 years of age. The external wall of the alveolar process of the upper and lower jaws has been removeed, along with some of the cancellated tissue, exposing the roots of the deciduous teeth and the crown of the permanent ones. It will be noticed that nearly all of the spaces of the maxillary bones are occupied by the dental organs, and even at this period of life there is but little room for maxillary sinus. By any interference with these organs at this period it will be seen how easily these teeth can be deflectd in an abnormal position, interfering with the sinus or nasal chamber, and by these chambers being changed, the associated cavities and adjoining structures will be changed also.

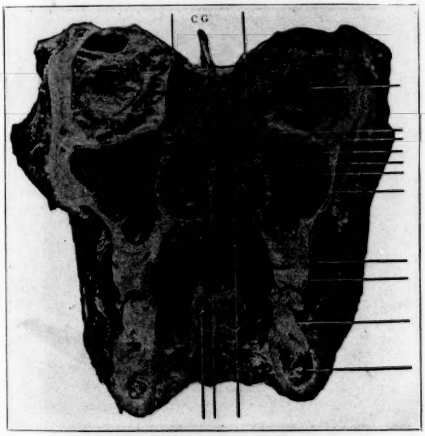

Figure 6.

It will be noticed that the position of the developing second and third upper molars is very close to the under and posterior portion of the orbit.

In the paper on "The Relations of the Nasal Chamber and Accessory Cavities and Dental Lesions," that Dr. Kyle read before the Section (see JOURNAL, October 7) he referred to a patient of mine whose third upper molar tooth is situated in the upper portion of the distal wall of the maxillary sinus. Dr. Stout thought it strange that a tooth should pass upward instead of downward. In my opinion the tooth referred to has never passed downward from its place of development; through some inflammatory process the tooth with its capsule has became adherent to the posterior wall of the maxillary bone, the "intrinsic force" being insufficient to force the tooth into its proper position at the time it should have made its descent. It is somewhat of a similar nature to an adherent testicle in the abdominal cavity or in the inguinal canal. There is no more reason to think that the tooth passed upward than to say a testicle has passed upward from the scrotum into the canal or abdominal cavity.

Plate 5 (Fig. 3†) is made from the skull of a seven-months' old fetus. It is a transverse bilateral section,

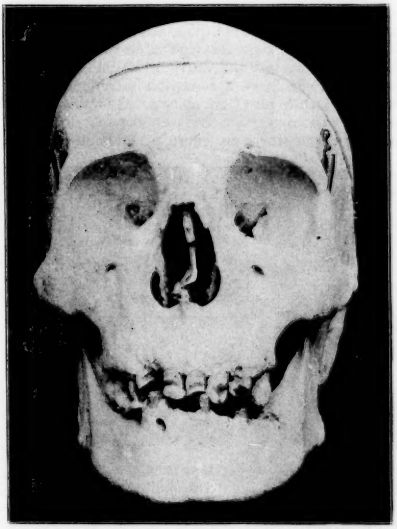

Figure 7.

passing just within the floor of the orbit. In the upper portion of this section will be seen two openings into the brain-case, with the crista galli and falx cerebri between them; below this is the nasal chamber with its septum; projecting from the upper walls of the chamber are the

Figure 11.

middle turbinals. In the middle meatus there is seen the unciform process forming the inner wall of the hiatus semilunaris; passing upward and a little forward from the base of the inferior turbinal to the outer side of this process is the hiatus semilunaris, from which there is a small opening communicating with the maxillary sinus, which is very small at this period of life. The greater portion of the maxillary bones, both superior and inferior, is occupied by the developing tooth organs. The section will show how nearly symmetric the skull is in the region at this time of life.

† The numbers in brackets refer to illustrations given in a paper read by me before this Section in 1897, which see in JOURNAL, April 2, 1898, pp. 781-789.

Plate 6 shows a perpendicular transverse bilateral section passing through the anterior portion of the orbit, maxillary sinus and first molar of each jaw on both sides. The eye has been divided in front of the crystalline lens. Between the upper portion of the nasal cavities are seen portions of the middle ethmoidal cells. It will be noticed how nearly symmetric the parts are. The maxillary sinuses are not quite alike, as the saw passes a little farther back on the right side than it did on the left. The floor of the antrum descends between the roots of the molars—a condition much more common among the white race than among the negroes, according to my observation. Abscesses on the roots of the teeth may, and sometimes do, cause perforation of the floor

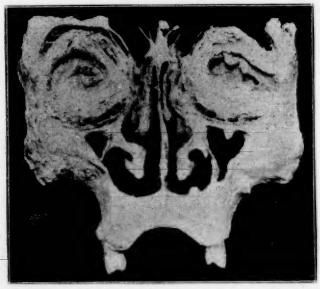

Figure 12.

of the antrum, and the extraction of a tooth may be accompanied by the fracture of the floor of the sinus, a portion of it coming away with the tooth.

We admit that pus or infected matter will pass in the direction of the least resistance; we might suppose that by the close approximation of the apical foramen of the roots of the molars, when an abscess is formed at their points, the infected matter would pass into the antrum instead of through the alveolar process into the mouth.

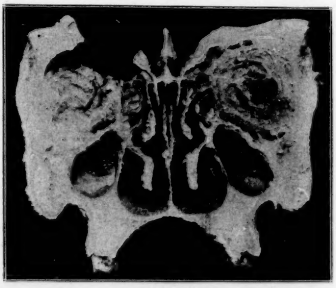

Figure 13.

My clinical experience teaches me otherwise, i. e., an abscess caused from an infected tooth usually makes its fistula into the mouth. The only reason I can give for this is that Nature usually protects weak, important points in various ways. In this case I believe the mucoperiosteum lining of the sinus takes up its defense, and through its osteoblastic layer builds and protects its walls against absorption and perforation.

Plate 7 is a front view of a skull that is not symmetric. It will be noticed that the canine fossa of the right side is lacking, the face being bulged out at this point. The teeth have not been in normal position. The septum is deflected over to the right side. In a skull of this character the internal structure will usually be very much out of symmetry. One might suppose that a large antrum would be found under the projection, but in this particular case it is not so.

Plate 8 presents a transverse section of the latter skull. It will be seen that the right antrum is smaller than the left, the fulness in the region of the infraorbital foramen and canine fossa being due to the thickness of the bone. The frontal sinuses of this specimen extend downward lower than usual, between the orbits.

Plate 9 (Fig. 11†) exhibits an entire lack of symmetry between the nasal fossa and the sinus of the right and left sides, the inferior meatus of one side being closed anteriorly by the deflected nasal septum and "spur" passing over and against the inferior turbinal and carrying it toward the outer wall of the fossa.

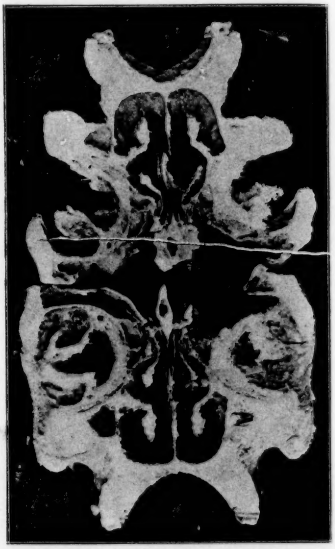

Figure 14.

In Plate 10 (Fig. 12†) it will be noted that a line or instrument passing through the axes of the alveolar process of the right side would perforate the nostril instead of the front of the maxillary sinus.

Plate 11 is from a different skull and has almost a straight septum and a bilateral symmetry as to the nasal chamber; the maxillary sinuses, however, vary throughout the depth of the skull. On the left side the antrum would not be reached by drilling through the alveolar process.

Plate 12 is also from a different skull, the transverse section made in the region of the first premolar. The septum is almost straight, the nasal chambers nearly symmetric on each side, but there is a great variation in the maxillary sinus. The outer wall of the nasal chamber of the right side is the outer portion of the maxillary bone, the floor of the antrum being on a much higher plane. In the floor of the left nasal chamber there will

be noticed an elevation which covers a tooth root, more than likely a supernumerary one.

In Plates 9 and 10, it may have been noticed that the nasal walls of the right inferior meatus, and in Slide No. 11 the left meatus, passed outward under the maxillary sinus to the facial portion of the maxillary bone; and in the distal portion to the zygomatic wall the same condition will be observed in Slide No. 12. We often read and hear of surgeons opening into the maxillary sinus through the canine fossa; if such an operation were performed on the skull of the specimen from which these photographs were made, the surgeon would go into the nasal chamber instead of the sinus, and I have known such to have taken place.

Figure 15.

Plate 13 is a transverse section made through a skull in the region of the second molar. The septum is straight, the nasal chamber and its appendages and the maxillary sinus are almost bilaterally symmetric. The maxillary sinuses are small and do not extend downward in the direction of the teeth and alveolar process.

Plate 14 is a section from the same skull as is No. 13. cut more anteriorly, in the region of the premolars; here we find the parts are almost symmetric. The crista galli has been cut transversely, showing within the walls a cell of considerable size; its opening is into the frontal sinus.

Figure 16.

Plate 15 is made from the skull of an old person where the bones have been much resorbed; it is comparatively symmetric, with the floor of the sinus much higher than usual and the nasal fossa passing outward to the external portion of the maxillary bone.

Plate 16 is also from a skull where the floor of the nasal chamber extends outward over the alveolar process until it reaches the outer wall of the maxillary bone. The points of the palatal roots of the first and second molars will be noticed in the floor of the nasal chamber. The floor of the sinus is well up on the side of the bone.

Plate 17 is from a transverse horizontal section through both orbits and the upper portion of the nasal chamber, giving a good view of a cross-section of the anterior, middle and posterior ethmoidal cells and sphenoid sinus. This picture also illustrates the ethmoidal cells situated principally between the two orbits in a horizontal section. Many of them are formed by the union of the orbital plates of the frontal and the ethmoid bone; others are alone associated with the ethmoid. The anterior ethmoid cells are the smallest of the three divisions, and open by several small orifices into the anterior portion of the hiatus semilunaris. The middle ethmoid cells vary

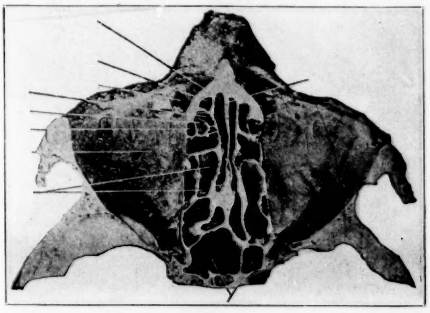

Figure 17.

more in size than the other two. The inner covering or wall is usually sphenoidal in form, and is known as the bulla-ethmoidalis. It is situated in the upper portion of the lateral wall of the hiatus similunaris, and extends down and inward toward the unciform process. The openings of the cells are in the inner walls of the bulla-ethmoidalis and discharge into the hiatus semilunaris.

It is through the increase in the size of the bulla-ethmoidalis that disturbance is caused in the anterior and superior portion of the nasal chamber, the frontal sinuses, and the antrum of Highmore; by its enlargement it presses toward and against the septum, closing

Figure 18.

the space. When the enlargement is downward it presses more upon the unciform process and into the hiatus semilunaris, closing this semicircular groove and preventing the passage of the fluids from the frontal sinuses and the anterior ethmoidal cells into the middle meatus; consequently they enter the maxillary sinus, and through general inflammation of the parts there is an excess of fluids that can not find exit. This would interfere with the vitality of the teeth through the pressure on the nerves

and vessels passing through the sinus. It is from these nerves and vessels that branches pass into the apical foramen of the roots of the various teeth. The excess of fluids without an outlet will cause fulness of all the anterior cells as well as the frontal sinus, and possibly interfere with the anterior portion of the brain-case. It is this blocking of the hiatus semilunaris which causes the secondary or associated openings between the antrum and nasal chambers.

Figure 19.

It will be noticed that there is a lack of bilateral symmetry in the two sides of the septum. The anterior and middle ethmoidal cells of the right side are more numerous than the left at this point of the section, the posterior ethmoidal cells and sphenoidal sinuses varying in shape and size.

Figure 19½.

Plate 18 is from a section made about the maxillo-molar articulation through which the maxillary sinus passes far into the malar bone.

Plate 19 gives a lateral view of the left nasal chamber; As far as I am acquainted with the text-books used in American medical colleges, they teach that there are three meati; this point should be corrected. Zuckerhandl has stated that about 62 per cent. of the skulls examined have four meati. I find fully that number in the skulls that I have made sections of, and in many cases I find five. There are five in the illustration herewith. I do not know of five being mentioned by writers.

Plate 19½ gives a view of a section cut near the posterior nares looking forward; it will be observed that there are six meati, the only case I have noticed showing six, in my section cutting.

Plate 20 gives a typical view of the lateral walls of the nasal chambers from the same skull. They are almost symmetric. It will be noticed that the ethmoid cells are

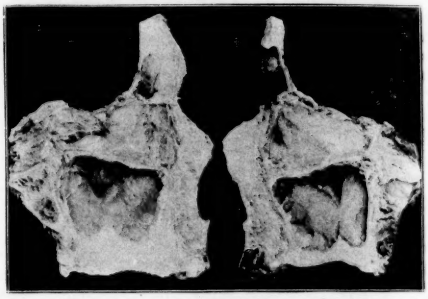

Figure 21.

exposed in the right picture. In both these, four meati are plainly seen and in one there are five.

The general teachings of our schools is that the fluids from the lachrymal glands flow through the lower meatus. The fluids from the frontal sinus, anterior ethmoidal cells and the maxillary sinus flow through the middle meatus, and the fluids from the posterior cells and the sphenoidal sinus flow through the third superior meatus. There should be added to the middle meatus the

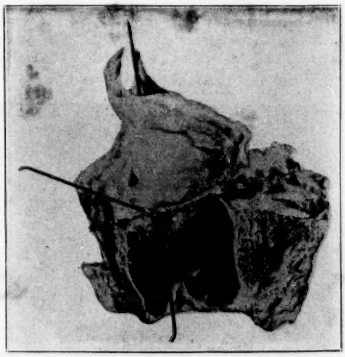

Figure 23.

fluid from the middle ethmoidal cells. In the third meatus the most constant cell that empties its fluid is the one found in the orbital process of the palatal bone, while in the fourth meatus, "The Supreme," there are the fluids from the sphenoidal cells and the posterior ethmoidal cell. Where there are five meati, the fluids from the posterior ethmoidal cell flow into the fifth.

Before dismissing this illustration I wish to call attention to a pathologic condition. It will be noticed, in the region of the frontal sinuses, that there is a deposit

filling the space. It was spongy at the part shown. In one I have cut the outer wall away in order to more fully expose and examine it, and I found that the spongy condition became more and more solid as it extended outward until it was much harder than ordinary bone.

Plate 21 shows the outer portion of this hardened structure projecting into the open space of the lateral portion of the frontal sinuses.

Figure 25.

The two maxillary sinuses of this skull are smaller than usually found. It will be noticed that there are slight ridges in the floor of the sinuses suggesting the formation of septi. Complete bony septi of the maxillary sinuses are spoken of. I have been unable to find such conditions, although I have specimens which, when looked at in a casual way, could be classed as such.

Figure 26.

Plate 22 (Fig. 94) shows a membranous septum extending well up into the sinus, with a round opening communicating with the posterior section of the antrum.

Plate 23 (Fig. 174) is shown on this section to give an idea of a large sinus in proportion to the bone. It will also be noticed that there is a ridge or partial septum: this is due to a root having been left in, the action of the re-absorption at this point being arrested.

Plate 24 is also shown to give an idea of the size of the maxillary sinus of an ordinary skull.

Plate 25 shows what might be a bony division of the maxillary sinus; but close investigation reveals that the crescent-shaped cavities situated on the upper posterior corner of the sinus are the cells of the orbital process of the palate bone, and passing a small probe from this opening it would enter the superior meatus of the nose.

Plate 26 is a section of a negro's skull, made through

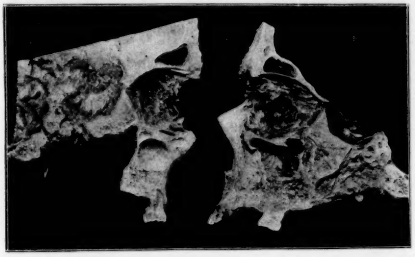

Figure 27.

the molar teeth and the middle of the orbit. It shows a sinus at the upper posterior corner of the maxillary sinus. This opens into the superior meatus of the nose and belongs to the palate bones. It will be noticed that the antrum is of very small size.

Figure 28.

Plate 27 is from the left side of another skull. The section is made in the same region as the last, a very small, peculiarly-shaped antrum and a crescent-shaped cell which opens into the superior meatus.

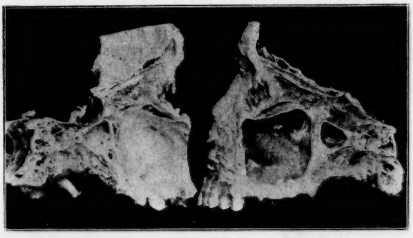

Figure 29.

Plate 28 is from the left side of another skull showing two sinuses. The posterior one passes around the posterior border to the external surface of the anterior sinus.

The bony septum of this specimen might very easily

be looked on as a division dividing the antrum into two; but I would not thus classify it, as this posterior sinus also opens into the superior meatus, as do the others.

It is a well-established fact that the maxillary sinus is developed by an invagination of the mucous membrane of the middle meatus into the body of the superior maxillary bone. If we should have two of these invaginations from the meatus, I could easily accept as a fact that these cells were a divided maxillary sinus; but as the outlet of the posterior one is into the superior meatus, and, as the cells of the orbital process of the palate bone open into the superior meatus, I claim that this is an enlarged palatal sinus or cell and not a divided maxillary sinus.

Plate 29 is another section made through the molar teeth and the center of the orbit. Posterior to the maxillary sinus we find another sinus of a different character, and, to judge by superficial observation, it might be said that it was related to the maxillary sinus or those belonging to the palate bone. When passing a probe into this it leads into the supreme or fourth meatus of the nose, showing that it is related or connected with the sphenoidal sinus. In fact, it is a very large sphenoidal sinus extending out laterally in a line almost to the outer parts of the maxillary band.

Plate 30 gives a view of the external wall of the nasal fossa of the same skull, the sphenoidal sinus in the right hand picture extending outward until it passes into the opening posterior to the maxillary sinus in the preceding slide. It will be observed that this large sphenoidal sinus extends well forward toward the frontal bone and backward to the basilar process of the sphenoid bone.

Figure 30.

Plate 31 gives an outer and inner view of the same section. In the right picture the cut is made passing through the premolar teeth and a little to the inner side of the middle of the orbit, exposing the inner wall of the maxillary sinus, the cell of the palatal bone, and the sphenoidal sinus, over which will be seen the sella turcica.

In the anterior clinoid process it will be noticed that there is a triangular opening which leads into the sphenoidal sinus; in the left picture the external wall of the nose will be observed, and in the region of the body of the sphenoidal bone a very large sinus at the bottom of which will be noticed a space under the sella turcica shown in the right picture.

By the illustrations shown it has been noted that we have many marked variations in the general character of the bony structures. It is evident that there must be some general principles underlying these changes. It may be well to define certain laws that influence them.

At the commencement of the growth of the embryo, and continuing throughout life, there are two forces constantly acting on the body, known as the intrinsic and extrinsic. If these two forces be normal in strength and application throughout fetal life, the result will be a fully developed child; but if these forces be interfered with in any way by lack of nourishment or undue external pressure, the child will not be of a normal physique.

If for some reason there is an insufficient quantity of lime-salts assimilated into the bony tissue, the bones will be soft and will not give proper shape to the body, they being the framework, such as the steel framework is to our lofty buildings. The brain-case is liable to enlarge when intrinsic growth forces out the soft yielding structure, while, on the other hand, an over-amount of calcic salts will harden the bone, and cause it to resist the intrinsic forces and prevent them from giving proper shape. At times the deposit of lime-salts will close up the sutures of the brain-case and absolutely prevent the expansion of the brain. Microcephalic skulls are sometimes caused in this way. By the use of the surgical engine, artificial sutures have been made which allow the brain to extend, as these sutures permit the case to expand.

The slopes and forms of the skull of the various races are influenced by the growth of the brain. In other words, the brain, by its intrinsic forces acting on the bone-tissue, will cause the skull to develop according to the character of the individual or race. If the anterior lobes of the brain are of large size, the forehead will be carried upward and forward; if, on the reverse, the cerebellum is large, the occipital region extends backward with a low receding forehead.

Figure 31.

After the birth of the child muscular action and various forces have direct influence over the change of the shape of the bones, according to the following general laws:

The normal application of forces to developing bone results in the normal development of the form of the bone. The abnormal application of forces under the same circumstances results in the development of an abnormal form. Abnormal applications of forces to bone in adult life will also change and modify the shape and character. The bones becoming changed, the whole body is modified according to the change in the bone tissue.

It is to be understood that the factor behind these anatomic variations leading to symmetric development is necessarily nutritional. Some logical interference with normal nutrition has brought about functional disturbance of a part, and this in turn a corresponding modification of anatomic form.

PROFESSOR LUBARSCH of Rostock, Germany, has been placed in charge of the department of pathologic anatomy in the new State Institute of Hygiene at Posen.

REPORT OF CASES OF PULMONARY TUBERCULOSIS, TREATED WITH INTRAPLEURAL INJECTIONS OF NITROGEN, WITH A CONSIDERATION OF THE PATHOLOGY OF COMPRESSION OF A TUBERCULOUS LUNG.*

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At the last meeting of this ASSOCIATION, in Denver, Dr. J. B. Murphy, in his oration on "Surgery of the Lung," called attention to the principles which underlie the healing of tuberculosis in general, and more particularly as they apply to the healing of foci of this disease in the lung. He referred to the statistics of Osler, Bollinger, Massini and Harris, who found evidence of old tuberculosis in from 7.5 to 39 per cent. of those who died from other causes than tuberculosis. It will be seen that this exceeds the percentage of deaths due to tuberculosis. From a careful consideration of conditions that enhance and favor healing of pulmonary tuberculosis, such as frequent cure of the disease, when it becomes complicated with serous pleurisy, empyema or pneumothorax, either natural or artificial, and the retraction of the chest wall that results from contraction of the diseased lung which goes hand in hand with the process of healing, the conclusion was certainly justifiable that artificial collapse and compression of the lung must aid the natural forces constantly at work in an effort to suppress the disease. Of the three methods of obtaining pulmonary quiescence, or collapse, viz.: extrapleural pneumothorax; thoracoplasty and intrapleural injections of fluid or gas, Dr. Murphy chose the last, and used, in his original experiments, chemically pure and sterilized nitrogen. Forlanini, at the meeting of the International Medical Congress at Rome in 1894, spoke very highly of the principle of lung compression, and reported some cases of tuberculosis of the lung that were cured as a result of pneumothorax, and suggested that on account of its slow absorption nitrogen would be the best gas to employ. At the time of his report at Rome, he had not used nitrogen. The principal effect of lung compression for tuberculosis has been observed by scores of clinicians two or three centuries, but the applicability of the principle has been practically neglected. At the Denver meeting five cases were reported in which the intrapleural nitrogen injections had been employed to collapse the tuberculous lung.

It may be well to call attention again to some of the clinical experiences and pathologic findings that suggest the idea of artificial compression of a tuberculous lung. Nearly all our text-books on the practice of medicine speak, though briefly, of the improvement of pulmonary tuberculosis that often ensues when this disease is complicated by pleurisy with effusion and empyema or pneumothorax. Dr. H. M. Hughes[1] reports a case that is very instructive in this respect, which I shall cite briefly:

"Miss P., aged 26, had lost one brother from tuberculosis; a year ago had an attack of hemoptysis, followed by cough with expectoration. When first seen the expectoration was blood-streaked; there was pain in the right side of the chest, and urgent dyspnea on exertion. The physical signs pointed to a lesion at the right apex. Attacks of pleurisy on the right side subsequently occurred. Three months later she was found by Dr. Hughes to have a right pneumothorax with succussion splash. There were then no signs of disease in the left lung. Five months subsequently paracentesis on the right side was performed, three pints of turbid fluid were removed, and the operation was repeated after another interval of two months. Recovery followed with partial re-expansion of the right lung. She died eighteen months after the discovery of the pneumothorax. Post-mortem: The left pleura was firmly adherent; the left upper lobe was softened throughout, and caseous tubercles were found in the lower lobe; the right pleura contained thirty ounces of thick purulent fluid; calcified tubercle was found in the right upper lobe, and a cavity containing white chalk-like substance separated from the surface only by thickened pleura."

It will be noted, from the consideration of this case, that the long-continued compression which was exerted on the right lung had resulted in the calcification of the tubercles, and that death occurred subsequently from an involvement of the opposite lung. Osler states that pneumothorax developing in the course of pulmonary tuberculosis seems to arrest the progress of the tuberculosis. Such references as "Pneumothorax, with pulmonary tuberculosis: recovery" are quite numerous as we look over the medical literature, and it would be a mere repetition of what I have already said were I to cite these cases.

Fütterer[2] reports a case in which the pneumothorax was due to rupture of the pleura pulmonalis of a tuberculous lung, and states that he "decided to wait some weeks to allow the patient to recover somewhat from the severe nervous shock he had experienced and to gain some strength as well as to permit the perforation to heal up, if a healing process could be established and to put the supposed tubercular changes of the lung under the beneficial influence of edema and hyperemia, which are both present to a high degree in a collapsed lung, and which no doubt are powerful means of destroying the tubercle bacilli."

It is evident that Fütterer believes the hyperemia and edema of the lung are the elements which are inimical to tuberculosis in the lung tissue. He calls attention to the fact that tuberculosis of the lung has but seldom been observed in conjunction with stenosis of the mitral valve which brings about a chronic hyperemia and edema of the lung with red and brown induration. Whether hyperemia and edema of the lung tissue is actually present after collapse and compression of the organ certainly is somewhat doubtful, and we shall have more to say concerning this in discussing the pathology of lung compression. The case reported by Fütterer is cited here, inasmuch as after careful and prolonged treatment of the pneumothorax by substituting a weak aqueous solution of oil of cloves for the air, the patient steadily improved, and, symptomatically, at any rate, he was considered cured some months after the onset of the pneumothorax.

It has been repeatedly maintained and proved that pleural empyema is curative of tuberculosis of the lung. It is estimated that 83 per cent. of all cases of empyema that develop in adults are the result of primary pulmonary tuberculosis. Of 134 uncomplicated cases of empyema operated by Koenig, Cabot and Runeberg[3], 7 remained with fistulæ and were incomplete cures; 4 died and 9 were lost sight of before the cure was complete—all the others recovered from their tuberculosis as well as their empyema. This certainly speaks forcibly for the curative effect of compression on the tuberculous lung. These favorable results are not so commonly observed

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in cases of pleurisy with serous effusion that complicate tuberculosis of the lung, if we judge from the work of Eichhorst on pleurisy[4]. Are we to consider that the presence of pus in the pleural cavity has a more favorable effect on tuberculosis in the lung than the serous effusion, or must we look elsewhere for an explanation for the higher rate of recoveries when empyema is the cause of the compression? Pleurisy with effusion is apt to come on quite early in the course of the pulmonary tuberculosis, and, by American physicians, at least, it has until recently been maintained that in the majority of these cases the disease of the pleura is primary, and consequently, when this class of cases recovered it was not supposed, when the pulmonary symptoms followed many months or years later, that a cure of tuberculosis which very likely existed in the lung primarily might have been effected by the compression to which it was subjected. Eichhorst, in 1895, attempted to settle this question of primary pleurisy, so long in dispute, and made a series of inoculative experiments in guinea-pigs, from which he concluded that 65.2 per cent. of all cases of so-called idiopathic pleurisy are tuberculous; Eichhorst states that bronchial glands are very probably more frequently responsible for the dissemination of the disease on the pleura than a focus of latent disease in the lung tissue itself. After having observed these cases for some time, it was found that after some months, or even years, they were readmitted to the hospital with symptoms of pulmonary tuberculosis. It has, however, been frequently observed in active and even advanced cases of pulmonary tuberculosis which were subjected to pressure of simple serous effusion that a patient's condition immediately improved, the cough diminished or disappeared, there was a marked gain in weight and strength, diminution in the number of bacilli in the sputum, and finally entire absence of cough. I shall report one such case that occurred in our own practice quite recently. If it be true that pleurisy with effusion is not so frequently followed by a cure of primary pulmonary tuberculosis as is the case with empyema in the adult, it is certainly due to the fact that the effusion is soon absorbed, and, therefore, the lung is not compressed long enough to enable the cicatrizing process to circumscribe the disease. In cases of pleurisy with effusion and in empyema complicating tuberculosis of a lung, tapping or drainage should not be resorted to unless special indications arise. Recognizing the value of maintaining the pulmonary compression, Dr. Murphy has for years insisted on refraining from early operations in these cases. In empyema the compression of the lung is maintained for a much longer time, and, indeed, is sometimes permanent on account of the marked pleural thickening and adhesions, which prevent the re-expansion even of the healthy parts. After these cases have been operated on, the cavity from which the pus was evacuated is obliterated by the retraction of the chest wall on the one hand, and the partial expansion of the lung on the other hand. No doubt if the compression by simple serous effusion were to continue and enable the diseased areas to cicatrize completely, the lung might be allowed to unfold, after the absorption of the fluid, without any special risk of further activity of the disease.

Let us ask ourselves, in this connection: How does compression of the lung increase its capacity for circumscribing and finally obliterating tuberculosis? Unless our hopes for the antitoxin treatment of tuberculosis are finally realized we shall be obliged to attack this disease more or less indirectly by merely aiding the individual, and his lung tissue in particular, to resist the dissemination of the disease in the lung, and to render inert the foci of the disease already existing in the tissues. To quote Dr. Roempler[5]: "Upon the ability of the organism to resist depends finally the possibility of cure. To increase this power of resistance, through gradual blunting of the susceptibility to irritation, through the improvement of the nutrition and quality of the food, and finally through the avoidance of hurtful influences, and through instruction and training for future guidance, is the principal problem of the phthisio-therapeutist." If tuberculosis is active for a time, even though it be not extensive, it very often follows that a mixed infection with various pyogenic organisms results. It is this that represents the element of danger in that it increases the amount of innocuous secretion, and favors a dissemination of the disease throughout the lung. It is usually not the tuberculosis per se that kills, but the mixed infection which, in advanced cases, goes hand in hand with it.

So far as the histologic changes are concerned, the conditions that favor a healing of tuberculosis in the lung are quite identical with those that we meet with in most tissues. A cavity in the lung, whether it be large or small, can scarcely be expected to heal readily when we think of the physical conditions that are present in and about such a diseased focus in the lung. If we meet with such a condition in other organs, we almost immediately resort to some surgical means by which the opposing walls of a cavity can be brought in apposition, or nearly so, and at the same time insure physiologic rest of the part. We do not expect a wound in the skin to heal unless we bring about apposition of its lips, and this is one of the first principles of surgery. If we meet with an old osteomyelitic cavity in a tibia, for instance, which is lined with infected granulation, we do not expect it to fill up with scar tissue, or bone, unless we make some effort to approximate the opposite walls, or fill the defect with some substance which will form a mechanical support. If this absence of proper mechanical conditions be so detrimental in such a structure as a bone it is scarcely to be expected that a cavity in a lung, in which there is continually an activity of the parts, will heal without them. It is a well-known fact that empyema cavities which have been opened and drained fail to heal when mechanical conditions are not such that the chest wall can be retracted, or the lung expanded, sufficiently to admit of the approximation of the two pleural surfaces, and surgeons never hesitate, under such conditions, to employ some form of thoracoplasty to bring about this desired effect. Lungs that have been extensively involved in tuberculosis, or other diseases which destroy tissue, when repaired, show a contraction of the chest wall which is commensurate with the amount of tissue destroyed.

The question is suggested: How shall we account for these experiences that we meet with clinically and pathologically, which go to show that when a tuberculous lung is compressed by pneumothorax and empyema, or a serous effusion, there is a marked improvement of the tuberculosis? It has been suggested that the intoxication, or the pleural irritation, may, in some peculiar way, act upon the tuberculosis advantageously, much the same as it has been suggested that a malarial infection is antagonistic to it.

I do not wish to be understood that the collapse of a tuberculous cavity is the only thing to be desired, and it is quite evident that compression exerts a favorable influence on the disease in the lung in many respects. It obstructs mechanically the various avenues by which this

infection is transmitted to other parts of the lung, the most important of these being the bronchi and the air-vesicles. Lymphatic circulation, which is next in importance to the air circulation in propagating tuberculosis to other parts, is also interfered with, and, according to some pathologists, it is the lymphatic circulation that plays the most important part in spreading this disease. When its function is suspended, the lymph circulation in any organ is interfered with. Späth[16], in an article "Über die Beziehungen der Lungencompression zur Lungentuberculose," cites an interesting case in this connection. In a case of miliary tuberculosis of the lungs, one lobe escaped infection entirely, and it had been compressed by pleuritic exudate. In the lungs, as in other tissues, toxic materials are carried into the general circulation through the medium, principally, of the lymphatic system and when this lymph circulation is interfered with, absorption is consequently proportionately diminished. If cavities exist in the lung that are not yet surrounded by connective tissue walls they always contain more or less of the secretion from which some toxic absorption is continuously going on. The lung, like a sponge, may be emptied of these secretions by exerting sufficient pressure upon it; at least these secretions are forced into the bronchi, where, as a result of the irritation, they are readily expectorated. This is very often demonstrated on the operating-table during the injection of nitrogen. It is not uncommon to have patients expectorate unusual quantities of these secretions during, or immediately after, the operation. The element of physiologic rest of the organ involved probably plays some part in the process of repair; that it does in other tissues can not be disputed.

The rationale of pulmonary compression for tuberculosis is well put by Tidey[6] in an article in which he sets forth the value of immobilizing, as much as possible, the thorax on the affected side. "In health the respiratory capacity of the lung is commensurate with the semi-circumference of the thorax. The diseased lung may be regarded as decreased in bulk, so far as function is concerned, by the amount of lung tissue involved, and it follows that the best mechanical condition of respiration would be secured by reducing the thoracic cavity in proportion to the reduced bulk of lung. Natural processes of repair tend to secure these conditions, but only lead to complete cicatrization when the disease is of a limited extent. We find then, clinically, a flattening of the chest wall, dislocation of adjacent organs or hypertrophy of the opposite lung. In so far as the inflammatory element in phthisis is concerned, rest and relaxation of the inflamed tissues seem indicated and essential to the healing process. The English schools aim at developing the latent resources of the lung so as to compensate for the loss of the respiratory surface." Tidey also states that in cases in which the attempt of developing the latent resources of the lung have been successful, one finds an immense development of the base of the lung with an extensive cavitation toward the apex. The cavitation is a constant source of danger, while the hypertrophy does not necessarily secure proportionately increased aëration of blood, because the latter depends on range of movements as well as unaffected respiratory area. With permanently increased circumference of the lower thorax there must necessarily be decreased range of motion. Such cases suggest how much better it would have been if the compensatory hypertrophy had extended inward instead of outward, so as to have invaded and occupied the excavated region. Tidey emphasizes the fact that pleuritic effusions frequently lead to amelioration of the lung affection in phthisis. He also sums up the advantages of mechanical support as follows: 1, in early stages—catarrahal stage—to give comparative rest and relaxation to lung tissue; 2, in the stage of consolidation to secure the same results, thereby limiting the risk of extension and to promote elimination of the diseased products by improving the circulation in and about the diseased area and to facilitate expectoration; 3, in the stage of cavitation, to promote the closure of cavities by directing healthy lung to encroach on diseased areas, instead of relying entirely on natural processes of cicatrization; 4, diminished tendency to hemorrhage by reduced tension on vessels and cicatricial tractions on walls; 5, the ultimate object is to obtain a smaller thoracic cavity filled with healthy lung instead of an enlarged thoracic cavity partly filled with diseased lung.

It would appear from the results of experiments on dogs that when air is injected into the pleural cavity it is quite rapidly absorbed. This would tend to discourage the idea of attempting compression of the lung by means of intrapleural injections of nitrogen. Unverrich[7] demonstrated, by means of chemical analyses of the air injected into pleural cavities of dogs, that the different gases are absorbed with varying degrees of rapidity—oxygen disappeared first, then carbon dioxid, and at last the nitrogen. When he irritated the pleura sufficiently to produce a serous exudate, the absorption of the latter was also quite rapid, but slower than the absorption of the gas. This seems to have been the universal experience of experimenters along this line. I have found no record of experiments made with pure nitrogen. In connection with the first case injected with nitrogen, that was reported by Dr. Murphy at Denver, it was demonstrated by repeated physical examinations and by radiography that the lung remained collapsed something over two months. In the other cases, reported at that time, the absorption of the gas took place somewhat more rapidly, and it has been our experience since that in the majority of cases the absorption at the end of three and one-half to four weeks has progressed sufficiently to make the breath-sounds audible.

From the experiments of Unverrich we learn that the oxygen and the carbon dioxid are absorbed much more rapidly than the nitrogen, and, according to Fowler and Godlee, when a pneumothorax results from perforation of the pleura pulmonalis, the air in the pleural cavity has the same composition as that in the alveoli: N, 79.5; CO_2, 4.38; O, 16. When the opening is closed, and it has been long present, the oxygen disappears and the carbonic acid and nitrogen relatively increase in quantity. From clinical observations in cases of natural as well as artificial pneumothorax it is evident that the rate of absorption depends, aside from the chemical composition of the gas, on the state of the serous membrane and on the pressure which the gas exerts upon it. Hydrothorax may disappear rapidly or very slowly, depending on the condition of the pleura and the circulatory system. In simple serous effusions a point is reached when the pressure on the pleura becomes so great that it would seem absorption were practically impossible and it is a well-known clinical fact that after the removal of a comparatively small amount of fluid, absorption may go on quite rapidly. This has been accounted for by supposing that the relief of the immense pressure permits of the opening of the points of absorption. The gas may be absorbed in much the same way, and it is possible that the condition of the pleura, and degree of distension of the cavity, may govern the rate of absorption.

Before beginning the citation of cases it will be well to consider the technic of the operation of intrapleural injections, and to discuss the immediate effects on the patient, and the possible accidents that may occur in connection with the procedure. The selection of the cases, for the purpose of excluding those in which the disease is too advanced, the determination of the existence of a pleural cavity, are probably the most difficult in the whole procedure, and are of the utmost importance. From our experience in the dead-house one would be led to believe that a goodly portion of all cases of tuberculosis is associated with more or less adhesive pleurisy, but our clinical experience has been that we were forced to abandon the operation in but small proportion of the cases selected. There is no infallible method for the determination of this point. The diminution or absence of respiratory excursion and retraction of the chest wall are highly suggestive, but are sometimes met with when no adhesions exist. No doubt some of the cases that have been injected have had attacks of pleurisy which resulted in friable or band-like adhesions. It has occurred that during the progress of the gas injection the patient has complained of severe pain in a circumscribed area definitely located and which sometimes suddenly disappear. This would indicate the possibility of severing some of the adhesive bands.

In the selection of cases from the standpoint of the quantity and extent of tuberculous changes it is difficult to come to positive conclusions. We have long since regretted that some patients have been refused operation on account of the extent of the disease. I believe some of them might have been saved, if I judge from the results in other advanced cases. I shall have occasion to refer to this again in dealing with the reports of these specific cases. The earlier treatment is begun in pulmonary tuberculosis, the better the prognosis. This is true with all methods of treatment. Every physician realizes that a disease in the apex of the lung will yield more readily to treatment than a lesion at the base, and that circumscribed foci are more readily affected favorably than scattered areas, even though the actual quantity of lung tissue involved in the latter does not exceed that in the former. H. P. Loomis[8], in a very able article, entitled "Certain Points of Interest in Phthisis," speaks of various constitutional conditions that are to be considered in the prognosis of tuberculous patients. He states that patients who have continuously more or less gastric symptoms, and who, therefore, are deprived of their greatest barrier to tuberculosis, do not usually progress favorably. Patients who have very early in their disease a rapid pulse which is not dependent on an elevation of temperature are usually not favorable cases. Phthisis developing in old age is frequently latent for some time and very often chronic. The fibroid diathesis is a favorable condition. Hemoptysis should not affect our prognosis. The element of heredity does not materially, if at all, handicap a patient's chances for recovery. He also refers to the fact that the location of the disease in the lung is quite important in determining the chances of recovery, and refers to the effect of compression on tuberculosis in the lung. He says: "I have seen a number of these cases—tuberculosis at base of lung—and also advanced cases of ordinary apical tuberculosis, suddenly start to improve, and the patient, from being in a desperate condition, became comparatively well, this change following upon the filling of the chest cavity on the affected side with effusion, the result of tuberculous pleurisy." Having in mind the favorable effect of compression, Loomis experimented with cocoa butter, sterilized plaster of Paris, etc., but he either failed to produce sufficient exudate to compress the lung or infected the pleural cavities.

I do not attempt to state specifically what constitutes a suitable case for the compression treatment, and I have already stated that the earlier the cases the better the prognosis, no matter what method of treatment is selected. Several of the cases that I shall report were very aggravated, and the question of the applicability of the injection to these cases was extremely difficult to decide.

For the operation the patients are put on the table, the skin in the neighborhood of the fifth and sixth interspaces, from the sternum to the post-axillary line, is carefully prepared, and the needle, which is an ordinary spear-pointed aspirating needle, is inserted in the fifth or sixth interspace, in about the anterior axillary line, or slightly farther back, particularly when the left side is injected. It is important, after the needle is inserted, and before the tube is attached, to assure one's self that the point of the needle is in the pleural cavity, and this is done by instructing the patient to take a series of deep inspirations when, if the needle be within the pleural cavity, a current of air can be heard to rush into it. If the needle has entered the lung, as it will when the two pleural surfaces are adherent, there is a slight current of air through the needle during forced expiration, and frequently a little frothy blood will appear. After several deep inspirations, if a little air has entered the pleural cavity, there will be a current during both phases of respiration. Sometimes, even though the mouth of the needle be within the pleural cavity, it is found that the current of gas meets with considerable resistance. This has frequently been noted in experiments on animals, and is due, undoubtedly, to the fact that the current of gas, unless much pressure be used, impinges upon such a small area of lung surface that it is not sufficient to overcome the cohesion that exists between the two layers of the pleura, which has been estimated at 12.5 mm. of mercury. As soon as a small quantity of gas has entered, the pleural surfaces are slightly separated over a comparatively small area, but sufficiently so that the inflowing gas under a slight pressure impinges on a greater surface of the lung and aids its natural elasticity to overcome the cohesive force which helps to maintain a condition of distension. As soon as the current is well started, unless some adhesions are present, from one to five cubic inches of gas enters the pleural cavity with each inspiration. The quantity of gas that can be injected depends on the presence or absence of adhesions, the amount of infiltration in the lung tissue, the condition of the heart and the size of the pleural cavity. In an individual of average size, if no adhesions are present, eighty cubic inches of gas constitutes the minimum quantity that may be expected to collapse the lung. The maximum quantity that I have been able to inject is 170 cubic inches. The immediate effect of this artificial pneumothorax is to increase the number of respirations, to diminish the pulse-rate, and to dislocate the heart. Weil and Thoma[9], in an experimental study of hydrothorax and pneumothorax, demonstrated that in closed pneumothorax and in hydrothorax, with movable fluid, the minute-volume of respiration is increased. There is an increase in the excretion of carbon dioxid, and the respirations are increased in frequency. If a considerable quantity of gas has been injected, there is occasonally a slight tendency to syncope, the pulse becomes slow and feeble and there is marked pallor. Saekur[17], in an experimental study of pneumothorax, demonstrated by careful measurements that after one

lung is collapsed by a pneumothorax, the other respires as much air as did both together. The cough and expectoration are usually increased immediately after the operation as the result of the expression of the secretions from the lung, and in cases where cavities have been compressed enormous quantities of purulent material are expectorated during and immediately after the operation. It is well to leave the needle in position for a few minutes after the current is turned off, so that a small quantity of gas can be withdrawn if the tendency to syncope is marked or the pain severe. The wound is sealed with collodion and, in order to avoid the escape of the gas into the subcutaneous cellular tissue, a tightly wound roller bandage is laid over the wound in the intercostal space and held in position with a long strip of adhesive plaster. This acts as an intercostal splint, and prevents the escape of the gas, which, without it, is sometimes considerable, extending into the cellular tissue of the neck so as to interfere more or less with respiration and deglutition.

Of the possible accidents that may occur in connection with the operation may be mentioned: 1, gas embolism; 2, wounding of the intercostal vessels; 3, pulmonary hemorrhage from puncture of the lung tissue; and 4, wounding of the pericardium in the event of its being distended.

Case 1.—Mr. G. E., aged 32, applied for examination, Aug. 25, 1898. His family history is negative. He has coughed more or less during the last five years. The disease began with an attack of acute bronchitis. He has lost little weight. At present he coughs and expectorates yellowish mucopurulent material several times during the day. He has been examined by many physicians, and a diagnosis of tuberculosis has been made by the majority of them. The sputum was found to contain tubercle bacilli in moderate quantity. He was advised to change climate and he used the ordinary antituberculous remedies. Examination of the chest shows the expansion to be good. There is slight dulness over the right apex, râles are heard over the right upper lobe. August 28, tubercle bacilli were found in the sputum. With this history and these physical signs, I prescribed for the patient and advised that he wait developments. I then lost sight of him until Dec. 9, 1898. He then stated that he had gradually grown worse; he coughed a little more and expectorated more freely; had little fever and no night sweats. There was dulness over the apex of the right lung and slightly impaired resonance over the entire upper lobe. Expiration was harsh and prolonged; numerous crepitant râles during inspiration. Bacilli were again found in sputum. Dec. 16, 1898, 115 cubic inches of nitrogen was injected into right pleural cavity; breath-sounds not completely suppressed over upper lobe. Pulse 80; resp. 20; temp. 99 F. December 28, gas almost entirely absorbed; crepitant râles over right apex diminished; has gained one pound, otherwise no change. Feb. 15, 1899, second injection of nitrogen. April 1, weight 137 pounds—an increase of eight pounds since first injection. Very slight expectoration in the morning; no fever; appetite good. There are very few dry râles over right apex; breath-sounds are a little harsh. Patient has been at work during the entire time of treatment.

Case 2.—Mr. W. S., aged 30, was examined Sept. 1, 1898. There had been no tuberculosis in his family. He has been sick since Christmas, 1897; began then to cough and expectorate, and has gradually grown weaker and has been unable to work since June 1. His weight at present is 129 pounds, normal weight 160. He has high fever and night sweats. Examination revealed dulness, crepitant and submucous râles and signs of cavity in left upper lobe, scattered râles in right upper lobe. Sputum contains great quantities of bacilli.

September 23, 40 cubic inches of nitrogen was injected into the left pleural cavity. There was considerable dyspnea following the operation. October 6, patient states he has gained two pounds since the operation, that he feels stronger and that his appetite is good. He still coughs a great deal at night; night sweats are less severe. October 28, he has gained four and one-half pounds since first examination; has night sweats only occasionally. There are still some signs of cavity in the left upper lobe.

This was a desperate case when treatment was instituted; his pulse at that time was 140; temp. 102.2; respiration 28. Three weeks later this patient developed an acute pneumothorax from rupture of a tuberculous focus and succumbed to the infection of the pleural cavity about two weeks after the accident.

(To be continued.)

PRIMARY TESTICULAR MUMPS.*

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RICHMOND, VA.

So constant is the primary seat of mumps in the parotid or other salivary glands that the disease is remarkably free of other synonyms than parotitis or parotiditis. In practice, however, we are familiar with its metastasis from its usual seat to the testicle in the male, or to the mamma or ovary in the female. But the condition to which this paper refers is rare—so rare indeed, that most text-books make no reference to it. Hence, it is worthy of note that I have met with several cases of *primary testicular mumps*.

My attention was first called to the subject some fifteen or more years ago by a case seen with the late Dr. F. D. Cunningham of Richmond. Other cases of primary testicular mumps occurred during that otherwise ordinary epidemic of parotitis. Verbal reports were made of some of the cases to the Richmond Academy of Medicine, but the records are lost and I am unable to find that other publication of the facts was made. The cases then seen, so far as I recall, were among employees of some of the larger tobacco factories of the city. While details of those are obscured by the lapse of time and the loss of notes, it is remembered that none of the cases referred to could be traced to a prior attack of gonorrhea, local injury or other cause for epididymitis or orchitis. The cases were followed up as to results, but no atrophy nor evidence of impairment of function followed.

An endemic of parotitis prevailed in Richmond during the winter of 1898-99, extending well over into the spring months of this year. During this period, four cases of primary testicular mumps came under my care—all of them since the middle of January, 1899. Three of the four cases were in young men of fairly good health, who were medical students in the University College of Medicine. The fourth case was a young man who boarded in the house with one of these students. Other patients with ordinary epidemic parotitis were in the boarding-houses with these students; but their attacks of parotitis ran the usual course without noticeable incident worthy of record.

In none of the four cases just referred to could the most exacting inquiry elicit the history of impure intercourse, or of recent venereal disease, nor was there history of injury or traumatism about the generative organs. In short, there was no recognizable cause for any disease of the contents of the scrotum—beyond the prevailing influence of epidemic mumps; nor had these patients had a previous attack of parotitis. There was a sameness in the clinical history of these four cases that makes a general description of the disease as it occurred in one a sufficient record for the others.

Chilly sensations running up the back, followed rapidly by rise of temperature—in one case reaching, in a few hours, about 103 F.—marked the onset. Besides

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

an almost coincident development of headache and nausea, enlargement, hardness and tenderness of the testicle set in. In three, the left testicle was decidedly more affected than the right; in the fourth case, it was hard to say which testicle was most affected. There were diffused lumbar pains in all the cases, and in one case the pain was so severe and peculiar that varioloid was suggested. In each the testicle was enlarged, hot and painful before the end of the first twenty-four hours after invasion.

During the second and third days after this enlarged, painful, feverish condition of the testicle began, a noticeable amount of swelling developed about the salivary glands—principally the parotids—which were sore on opening the mouth or on pressure from without; but there was no abatement of the testicular trouble. The headache, lumbar pains, fever and nausea continued. The affected testicle continued to increase in size—in one case reaching about three times its normal dimensions, and yet without material involvement of the epididymis, vas deferens, or other structure of the part. By the sixth day, the general signs and symptoms began to abate, and disappeared by the eighth or ninth day, so far as manifestations of the infection were concerned. In a few days more the enlarged tender testicles and the soreness extending up into the abdomen along the course of the spermatic cords gradually abated until recovery occurred. During the course of the disease, there was no urethral discharge, no bladder irritation, no evidence of suppuration anywhere, nor did the involvement of the epididymis leave any sign of permanent change in structure.

While the neck glands became secondarily involved in three of the cases, in only one case were the signs of parotitis at all prominent; and that case would have been spoken of as a mild case of mumps had it not been for the severe primary testicular involvement. In none of the cases were the testicular signs or symptoms modified when the salivary glands became secondarily affected. In each case effort was made, but without effect, to "draw the disease" to the neck glands—as the term is commonly used—by poultices, hot applications, etc.

As to treatment, guaiacol was used in two of the cases reported, without benefit; but phenacetin, with salol and digitalis, relieved much of the discomfort. Tobacco poultices over the testicles, and afterward absorbent cotton wet with 15 to 20 per cent. solutions of ammonium chlorid applied on the scrotum, and rest in bed relieved pain and hastened recovery. Of course, suspensory bandages for the testes, etc., were used. No impairment of function seems to have resulted in any of the cases.

I have referred at such length to these cases of primary testicular mumps because they are rare and do not find sufficient recognition in the books. Such cases occur in some epidemics of parotitis and not in others. Comby[1] noted cases of febrile orchitis without parotitis during an epidemic of mumps. Morton[2] described other cases under the name of "febris testicularis." Some military surgeons have described cases under the name of "rheumatoid orchitis," "primary infectious orchitis," etc. Kovacs reported two cases of orchitic mumps without parotitis. Laveran admits that orchitis may constitute the only manifestation of mumps. In the epidemic of 1832 at Chateauroux there were cases of orchitis without involvement of the parotid gland. The same was observed during the epidemic in Geneva. Desbarreaux-Bernard reported several cases of this abnormal form of mumps. During the epidemic of parotitis in Dantzig, of 29 soldiers having orchitis, 19 had no parotid swelling. Rizet, Boyer, Debize, Vidal, Jacob, Sorel, Laveran, Chauvin, Servier, and others have reported similar cases.

[1] Twentieth Century Practice of Medicine, vol. xiii, p. 582.
[2] Ibid.

SHOCK, HEMORRHAGE AND SEPTICEMIA.*

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In tabulating the symptoms of shock and hemorrhage, we usually note the following: An expressionless countenance, pallor, with corresponding coldness of face and mucous membrane, and clammy skin, often slight or profuse sweats, chilly sensations, irregular heart action, with weak, irregular, thready, often imperceptible pulse, and irregular sighing respiration.

These two conditions, shock and hemorrhage, or rather their symptoms, are so intimately associated that I will not take time mentioning the slight variations or the local conditions found in hemorrhage alone.

In the symptoms of septicemia we at first find the essential signs of fever, with often a full, bounding pulse; but later we get the feeble, less regular pulse, sighing respiration, clammy skin with slight or profuse sweats, countenance expressionless, or expressing great concern, the secretions from the bowels and kidneys scanty, and as regards these symptoms they are all due to a vasomotor paralysis, either through direct action on the heart, as from hemorrhage and septicemia, or from a reflex action which is more commonly the cause in shock.

The treatment I recommend is the intravenous injection of normal salt solution, not particularly in shock and hemorrhage, but in septicemia. The subcutaneous injection of this solution is familiar to all, but I am quite certain that the treatment of septicemia by intravenous injection is rare. I never saw it mentioned until an editorial in the JOURNAL, Dec. 31, 1898, and acting on the suggestion, I performed the operation, followed by what I consider brilliant results.

The modus operandi, which I will explain later, is somewhat different from that used in simple intravenous injection.

A young woman, 29 years of age, came under my observation Feb. 23, 1899, suffering from general septicemia. She gave a history of having had a chill daily for four days previously, undoubtedly septic in character, followed by a high temperature. An hour after I saw her she had another chill, with temperature 102.2. This was at 10 a. m. At 4 p. m. it was 104, at 9:30, 104.2, and at this time I used the solution. One hour afterward her temperature was 103.8, the next morning, 100, later going down to 99.8, but again going up to 100. Two days after the operation, the temperature taken at different times, was 99, 98.2, 99, 98.6, and 100; the following day, 99.4, 99, 99, 98; the next day, 98, 99, 99, and 98.

Going back for a moment to the day of the operation, the temperature gradually increased from 102.2 to 104.2, at which time I operated. It fell almost immediately after the operation. From that time on her temperature did not go above 100.2, and her general condition was also greatly improved. I might add that she had no chill after the operation.

Another case was that of a young man, aged 19, who came under observation March 11, 1899. He had had a chill that morning, and on examination showed

*Read before the Will County Medical Society, April 4, 1899.

a fairly typic case of typhoid. Treatment was as in the first case.

The first two days, March 11 and 12, the temperature and pulse were: Temperature, 103.4, pulse 100; temperature 103.6, pulse 104; temperature 102, pulse 112; temperature 103.6, pulse 120; temperature 105, pulse 120. We gave him frequent cold baths, but with very slight results, the temperature failing to decrease more than 1 to 1.5 degree after each bath. It would remain stationary a short time, then gradually increase again. March 12, at 4 p. m., his temperature had reached 105, and he was in the stage of collapse, pulse and respiration very rapid and feeble, and he showed every sign of impending dissolution. I then did the same operation as in the first case, with the following result: Two hours after the operation the temperature had gone down two degrees; at eight o'clock, four hours afterward, it was normal, and at midnight 97.6. It remained between 98 and 99 for the following two days. On the third day it went a little above 100, but finally went back to normal, and remained so throughout the remainder of the illness.

The method of operating is as follows: I first froze a small area over the right basilic vein, with ethyl chlorid, and exposed the vein through an incision about three-fourths of an inch long. I ligated the vein at the distal end of the incision, and put a temporary loop over the vein just above the other. I next proceeded in the same manner on the left arm, except that I ligated the proximal end, putting a temporary loop around the distal end. While doing this, I had the nurse prepare 1500 c.c. of normal salt solution, at a temperature of 104 degrees. I now snipped the right vein with the scissors, between the two ligatures, and inserted the pipette, which was attached to the tube leading from an irrigating bag containing the salt solution. At the same time, I had the assistant divide the vein in the left arm, so as to allow the deteriorated blood to escape, while I injected the salt solution into the right arm. In the case of septicemia I allowed 350 c.c. of blood to escape, and injected 750 c.c. of solution. Had I allowed more salt solution to enter the circulation, I believe the result would have been still more gratifying. In the case of typhoid, I allowed 500 c.c. of blood to escape, and injected 1500 c.c. of salt solution. After finishing the injection, I tightened the temporary ligatures on each vein, closed the incisions by two small sutures, and sealed them with collodion. Strict asepsis was observed throughout the proceeding.

The effect on the pulse in both cases was immediately very noticeable. Before the operation it was weak, small and rapid, but before it was at an end it became full, steady and slower, and, on inquiry, both patients said they felt considerably better.

While I have but the two cases to report, I believe the results warrant its trial in every case where our ordinary methods fail. Not only do I believe it applicable in such cases as the two I described, but in all severe cases of septicemia, typhoid, malaria, uremia, or any condition in which the blood is charged with toxic material. The operation is a comparatively safe one, and can be performed by any one having ordinary surgical skill.

No other treatment was instituted in these two cases, as I wished to study the effects of this form of treatment, nor was the local condition in the one case, from which the septicemia originated, disturbed.

The intravenous injection for shock and hemorrhage is too frequently neglected, and I believe many cases could be saved, were it resorted to. The subcutaneous method of injection is too slow in a large percentage of cases, for when called for at all, the heart is usually very weak, and the absorbing power of the body is so poor that the salt solution is either not absorbed at all, or else so slowly as to be of no benefit to the patient. The intravenous method does not take a much longer time for its performance than does the subcutaneous method, while its effects are very much more rapid and certain.

Therapeutics.

Cold Baths in Delirium Tremens.

Maurice Lettulle, in *La Presse Medicale* of July 8, 1899, describes the case of a man, 33 years of age, admitted to the Hospital Boucicaut with a severe attack of delirium tremens, which had begun four hours before. At the time the patient was in intense excitement, but was capable of answering questions. The muscles of the trunk were in constant tremor, and the limbs were thrown about with great violence. A camisole was applied, which, instead of calming, seemed to aggravate the excitement. The temperature on admission was 104.5 F., and the face and extremities were cyanosed. Seven hours after the beginning of the attack he was given a cold bath of 64.4 F. He remained in the bath for thirty minutes, and at the end of that time suddenly passed into a state of collapse, with the pulse remaining at the same rate as when he entered the bath, 108. In the meantime the temperature had fallen to 92.6. This was ten minutes after the bath had been given. From this extremely low point the temperature gradually improved until twelve hours after the bath had been given, when it was normal. The patient did not have a return of the delirium. The author enters into a consideration of the literature of the treatment of delirium tremens by cold baths. He regards it as a distinct improvement on the use of opium, chloral, or digitalis. The bath in the case described was administered for too long a time, but he thinks it is justified in these very grave cases, and in the case in question it was followed by a lowering of the temperature and a disappearance of the delirium.—*Medicine.*

Acute Coryza.

Often, especially when the attack is accompanied by aching pains, or other evidences of a general cold, a free sweat is useful:

R.	Antipyrin	gr. xv
	Pilocarpin hydrochlorate	gr. ½
	Tinct. aconite	gtt. viii
	Aquæ	℥iss

Take a tablespoonful, immediately followed by a general or foot-bath (10 minutes); then, the patient being covered in bed, one dessertspoonful in a tumbler of hot toddy, repeated, if no sweating occur, in 20 minutes. When there is pain, if morphin does not disagree with the patient 1/6 grain may be added to the mixture.—*H. C. Wood, in Wood and Fitz's Practice of Medicine.*

Boas' Medical Treatment of Fissure of the Anus.

Ten out of twelve cases have been cured by Boas with a simple medical treatment founded on complete immobilization of the anal region. The patient remains a week in bed with no food except light broths, taking ten drops of tincture of opium three times a day, and thus insuring absolute constipation. If the fissure is visible, it is dusted with iodoform or calomel, but without touching it with hand, instrument or dressing of any kind. At the end of eight days a large dose of castor-oil is administered, cautioning the patient not to allow defecation until the feces are entirely liquid, and to refrain from the slightest effort. The fissure is usually healed by this time, but some cases require a second or third week

of treatment. The method only fails when it is impossible to secure complete retention of the feces.—*Semaine Med.*, September 13.

Gelsemium Sempervirens.

Dr. N. P. Barnes maintains that this drug should receive more attention because of its great therapeutic value. One-fifth of 1 per cent. is the average amount of alkaloid in the severed root, and constitutional effects are regularly obtained from the standard fluid extract. Gelseminine, the alkaloid, is a non-crystallizable dry mass, white, alkaline, insoluble in water, but soluble in alcohol, ether, and chloroform. There are several unofficial preparations, but the official fluid extract and tincture are very satisfactory. The drug is antispasmodic, antipyretic, antineuralgic, antimalarial, analgesic, hypnotic, and diaphoretic. Through its direct action on the spinal cord, dulling and paralyzing mobility and sensibility, it is a nervous sedative and depressant. The third, fourth, fifth, and sixth cranial nerves and those supplying the genito-urinary organs are especially affected. Reflex excitability is first increased and then diminished, and finally exhausted. Small doses, one-half to one minim of the fluid extract, relax the general nervous system, relieve nervous irritation and muscular tension. Large doses, one to five minims, cause langour, enfeebled muscular action, impair sensibility, dilate the pupils, cause ptosis, and excite diaphoresis. Effects of moderate doses disappear in three hours. Toxic doses (ten minims or more) produce vertigo, diplopia, ptosis, mydriasis, prostration and muscular relaxation, partial paralysis of sphincters, respiration, and lastly, heart failure. Antagonists are small doses of opium, or morphin and atropin. Six to eight hours elapse before a toxic dose is fatal. It is indicated in conditions of exalted nerve function, mental excitation, and muscular tension. Early in fevers it is antipyretic and sedative. As a succedaneum to quinin in malaria it is of value, relieving the unpleasant effects of the former. The head symptoms in a commencing "cold" are dissipated in a few hours. In la grippe gelsemium controls the fever, headache, pains, and restlessness. Pain of a neuralgic or rheumatic character is relieved by this drug where there is arterial excitement or local congestion. In tic douloureaux it is almost specific. Coccygodynia is often cured, and in sciatica gelsemium is useful, but not curative. Ovarian neuralgia and uterine colic (?) are efficiently treated with it. Headaches, neuralgic, congestive or periodic, are promptly relieved. With sodium bromid gelsemium is a most efficient hypnotic. Muscular spasms, such as epileptic and hysterical convulsions, are relieved. To prevent erections and chordee in gonorrhea, gelsemium is invaluable. In catarrhal cystitis, irritable bladder, and incontinence of urine from spasm of muscular fibers gelsemium is excellent.—*Maryland Med. Jour.; Am. Jour. Med. Sciences.*

Rectal Feeding.

The following enema is suggested by Boas, when rectal alimentation becomes necessary:

℞ Milk ..... ℥viii
Salt ..... gr. xxx
Claret ..... ℥ss

To this add prepared cereal food 1 tablespoonful and the yolks of two eggs. Use one to three in 24 hours.

Painless Injections of Grey Oil.

Guaiacol will render painless intramuscular injections of grey oil, oil with calomel, and especially oily solutions of biniodid of mercury, frequently employed for a long time in the treatment of syphilis. E. Bazin of Bordeaux regards it as sufficient to incorporate with the preparation to be used 3 per cent. of the purified drug. Here is the formula which Dr. Lagrange recommends in his supplementary course on ophthalmology in the Bordeaux Faculty of Medicine:

Sterilized olive oil ..... ℥xx
Mercury biniodid ..... gr. vi
Synthetic guaiacol ..... gr. xxxvi

Should the physician inject every day, or every second day, in the region of the thigh, say thirty grains of this solution, it will represent about one-quarter of a grain of the biniodid of mercury. It is a well-known fact that mercury salts, and particularly iodin-mercury preparations can not be combined with cocain without precipitating the latter and rendering it useless as an anesthetic. All such remedies for hypodermic use will probably work well with guaiacol.—*Merck's Archives.*

Scarlet Fever.

J. Lewis Smith recommends the following "diaphoretic, diuretic and laxative" mixture for scarlatinal nephritis:

℞ Potassii acetatis
Potassii bicarbonatis
Potassii citratis, āā ..... ℥ii
Infus. tritici repentis, ad ..... ℥viii

A teaspoonful every three or four hours for a child of 5 years.

Whitla gives the following diaphoretic mixture in the early stage of scarlet fever:

℞ Spirit. etheris nitrosi ..... ℥ii
Potassii citratis ..... ℥i
Liq. ammon. acet. ..... ℥iss
Syrupi simplicis ..... ℥i
Aquæ camphoræ, ad ..... ℥iv
M. Sig. A teaspoonful every three hours.

Widerhofer recommends the following for scarlet fever with diphtheric throat affection:

℞ Potassii chloratis ..... gr. xx
Syrupi aurantii ..... ℥iii
Decoct. cinchonæ, ad ..... ℥iii
M. Sig. A teaspoonful every two hours.

℞ Potassii chloratis ..... ℥i
Aquæ ..... ℥xii

The diphtheric spots to be also touched with pure lactic acid.

THROAT SPRAY.

Whitla uses the following spray for the throat in scarlet fever:

℞ Glycerini boracis ..... ℥iv
Glycerini acid. carbolici ..... ℥iii
Aquæ rosæ, ad ..... ℥x

SKIN LOTION.

J. Lewis Smith recommends the following lotion for the itching of the skin in scarlet fever:

℞ Acidi carbolici ..... ℥i
Tinct. camphoræ ..... ℥ii
Aquæ puræ ..... Oi
M. Sig. Shake well, and apply over surface when needed for pruritus. —*The Practitioner.*

Urticaria.

Mr. Skinner, pharmacist to the Great Northern Hospital, recommends the following formula for allaying the itching, burning sensation of urticaria:

℞ Liquoris hamamelidis ..... ℥ii
Salis maris ..... ℥ss
Aquæ destillatæ, ad ..... Oi
To be applied freely.

He also speaks highly of the following cold cream:

℞ Adipis benzoati ..... ℥iv
Ceræ albæ ..... ℥ss
Cetacei ..... ℥i
Boracis ..... ℥ss
Glycerini ..... ℥i
Aquæ cologniensis ..... ℥iiss
—*Therapeutic Gazette.*

Treatment of Parotitis.

Avoid exposure, which, in the case of boys, may favor metastasis to the testes. Mild cathartics. Liquid diet.

℞ Tinct. belladonnæ
Tinct. aconiti
Tinct. opii, āā ..... ℥iv
M. Sig. Apply several times daily over the swelling with the finger tips or a camel's hair pencil.

Or

℞ Ichthyol
Plumbi iodidi, āā ..... gr. xlv
Ammonii chloridi ..... gr. xxx
Adipis ..... ℥i
M. Sig. Apply three times daily and cover with a cotton-wool dressing.—*Trouchet.*

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of Medical Sciences, October.

1.—*Surgical Treatment of Tumors within the Spinal Canal. James T. Putnam and J. Collins Warren.
2.— A Fifth Case of "Fungus Foot" in America. J. T. Arwine and D. S. Lamb.
3.—*Some Facts in Regard to Aneurysm of the Aorta. H. A. Hare and C. A. Holder.
4.— Report of a Case of Hodgkin's Disease, Showing Long Periods of Fever. Cunningham Wilson.
5.— A Case of Acute Gangrenous Pancreatitis, with Fat Necrosis. J. A. Scott.
6.—*Diagnostic Value of the Wintrich Tracheal Sound. C. F. Hoover.
7.— Splenic Pseudoleukemia (Amenia Splenica; Splenomegalia Primitive) with Report of a Case. Bertram W. Sippy.
8.— Perforation of the Stomach in an Infant Seven Weeks Old. T. M. Rotch.
9.— A Critical Summary of Recent Literature Concerning Some Recently Described Reflexes. Joseph Sailer.

Pennsylvania Medical Journal, September.

10.— Address in Medicine. J. C. Lange.
11.—*The Mechanical Treatment of Ptosis. E. B. Heckel.
12.— Some Clinical Observations on Diseases of the Skin. John V. Shoemaker.
13.—*Four Cases of Carcinoma of the Breast Treated by the Cataphoric Method. G. Betton Massey.
14.— Puerperal Septicemia. G. W. Wagoner.
15.—*Intoxication from Toxalbumins and other Toxins. Mary McD. Shick.
16.— Diphtheria in the Rosella Foundling Asylum and Maternity Hospital of Pittsburg. Adolph Koenig.
17.— A Case of Myxedema. Edward H. Small.
18.— Tuberculosis Following Typhoid Fever. F. U. Ferguson.
19.— Relapse of Typhoid Fever. L. H. Mayer.
20.— The Diagnosis of Mild Cases of Smallpox. W. D. Haight.

St. Louis Medical and Surgical Journal, October.

21.— Occasional Periscope of Antenatal Pathology. J. W. Ballantyne.
22.—*LaGrippe; Its Manifestations, Complications and Treatment. W. W. Grube.

Interstate Medical Journal, September.

23.—*A Case of Perforated Os and Lacerated Perineum - Two Operations —Recovery. Herman E. Pearse.
24.—*The Sternberg-Sanarelli Controversy in Regard to the Bacillus Icteroides as the Specific Micro-organism of Yellow Fever. R. B. H. Gradwohl.
25.—*Diphtheritic Pneumonia. M. Dwight Jennings.
26.—*An Interesting Case. Frank M. Floyd.
27.— The Motor Neuron and Its Practical Unity in Diagnosis. John Punton.

The New Orleans Medical and Surgical Journal, October.

28.— Esophagoscopy—Its Application in Two Cases. Gordon King.
29.— Bile and Putrefaction in Intestinal Acholia. Otto Lerch.
30.— Hematoma of the Neck, Simulating Common Carotid Aneurysm. Felix A. Larue.
31.— Leprosy in St. Mary's Parish. Three Cases. Isadore Dyer.

Laryngoscope (St. Louis, Mo.), September.

32.—*The Offending Middle Turbinal. Edwin Pynchon.
33.—*Fibrinous Rhinitis. D. J. Gibb Wishart.
34.—*Acute Septic Rhinitis of Childhood. Lewis S. Somers.
35.— Parasitic Affections of the Pharynx. Ellet Orrin Sisson.

Cleveland Journal of Medicine, September.

36.—*Anastomoses Between Various Portions of the Alimentary Tract. Dudley P. Allen.
37.— Report of a Case of Epithelioma. F. E. Bunts.
38.— A Case of Complete Prolapse of the Uterus; Hysterectomy. Hunter Robb.
39.—*Ludwig's Angina and Certain Forms of Cervical Suppuration. C. A. Hamann.
40.—*Tones and Murmurs Heard by Auscultating the Oral Cavity. Harrison G. Wagner.

Hot Springs Medical Journal, September.

41.— Infantile Syphilis. T. Henry Jones.

Ophthalmic Record (Chicago), September.

42.—*Albuminuria and Its Relation to Diseases of the Eye. Alex. W. Stirling.
43.— Penetration of an Eye with a Rusty Twenty-penny Cut Spike. Wm. C. Bane.
44.—*Blindness from Drinking Methyl-Alcohol. H. Gifford.
45.— Convenient Apparatus for Testing the Color Sense. S. Mitchell.
46.— Capsular Cataracts. H. Beckles Chandler.
47.—*Strabismus or Squint; A Theory and Treatment. Francis Valk.
48.— Correction of Divergent Strabismus by a New Method and New Instrument. D. Milton Greene.

Louisville Monthly Journal of Medicine and Surgery, September.

49.—*Errors of Refraction and Accommodation, and the Hygiene of Vision. M. L. Heffelfinger.
50.—*Paroxysmal Tachycardia. Shelby C. Carson.
51.— Pus Tubes and Their Radical Treatment: Report of a Case. R. Lindsey Ireland.
52.—*Treatment of Primary, Non Surgical and Recurrent Cancer. Wilbur F. Sterman.
53.— Lavage of the Stomach. J. T. Green.

Medical Age, September 25.

54.—*The Art of Diagnosis. A. L. Benedict.
55.—*Tuberculosis and the Throat. W. F. Strangeways.

Kansas City Medical Record, September.

56.— Remarks on Brain Lesions Following Infective Middle-Ear Inflammation, with Special Reference to Symptoms and Briefly as to Operative Measures. B. E. Fryer.
57.— Inflammation of the Female Breast. H. E. Pearse.

St. Paul Medical Journal, October.

58.— Smallpox. Frederick Leavitt.
59.— Events in the History of Medicine. Franklin Staples.
60.—*A Case of Left-sided Appendicitis, Complicated by Intestinal Obstruction. Wm. E. Ground.
61.— Aneurysm. C. H. Mayo.

The Toledo Medical and Surgical Reporter, October.

62.— Some Neglected Facts in Human Biological History. David P. Jackson.
63.— Alkaloids and Accuracy, or Galenicals and Guess Work. J. R. Landers.
64.— Stomach Troubles and How to Relieve Them. G. G. Thornton.
65.— The Perineal Body. Byron Robinson.
66.— Retroperitoneal Abscess Simulating Morbus Coxarius or Hip Disease. O. Main.

Obstetrics, September.

67.—*Obstetric Teaching. James Clifton Edgar.
68.—*Placenta Previa. Thomas H. Baker.

Annals of Gynecology and Obstetrics, September.

69.—*The Conditions under Which We Are to Select the Vaginal Route in Preference to Abdominal Section. John Sprecht.
70.—*Dermoid Cysts of the Ovary. Crawford E. Fritts.
71.—*Some Causes of Maternal Dystocia. R. E. Cutts.
72.— Rhachitis. Henry N. Potter.
73.— Medicinal Treatment of Diphtheria, Other than with Antitoxin. Edwin M. Fuller.

The Medical and Surgical Monitor, September 15.

74.— Varicocele. W. H. Link.
75.— Points in the Treatment of Typhoid Fever. Allison Maxwell.
76.— Brief Facts About Cathartics. Samuel E. Earp.

The Canadian Journal of Medicine and Surgery, October.

77.—*Presidential Address at Thirty-second Annual Meeting of Canadian Medical Association, Toronto, 1899. Irving H. Cameron.
78.—*Christian Science. J. H. Richardson.
79.—*Typhoid Infection without Lesions in the Intestines; a Case with Remarks. A. McPhedran.
80.—*How to Deal with the Consumptive Poor. E. J. Barrick.
81.—*Fibrinous Rhinitis. D. J. Gibb Wishart.
82.— Results Already Achieved at the Muskoka Cottage Sanatorium. J. H. Elliott.

The Medical Fortnightly, September 15.

83.— Physiology. A. L. Benedict.
84.— Scattered Leaves From a Physician's Diary, No. 9.—A Patent Medicine. Albert Abrams.

American Journal of Surgery and Gynecology, September.

85.—*Neuroses Sometimes Following Oöphorectomy. W. E. B. Davis.
86.—*Surgical Complications of Typhoid Fever. Hugh M. Taylor.
87.— Myomectomy in a Pregnant Uterus for Obstruction to Labor. Geo. H. Noble.
88.— Carcinoma Uteri Following a Cervical Laceration. August Schachner.
89.— Trephining for Traumatic Epilepsy. W. O. Roberts.
90.—*Fracture of the Ribs. Edward Borck.
91.— The Use of the Curette in Removing Adherent Placenta, with Report of Three Cases. Walker Bourne Gossett.
92.— Operation for Gunshot Wound of the Abdomen. Recovery. Ap Morgan Vance.
93.— A Memorial of a Prominent Western Gynecologist. John M. Allen.
94.— Vaginal Operation for Relief of Pelvic Disease. William H. Wathen.
95.—*Is Iodoform a *Sine Qua Non* in Gynecology? G. Howard Thompson.
96.— Inflammation of the Lining Membrane of the Maxillary Sinus. Wm. F. A. Schultz.
97.— Treatment of Endometritis. Wm. A. B. Sellmann.

The Medical Herald, September.

98.—*The Limitations of Digestive Practice. A. L. Benedict.
99.— Typhoid Fever. Wm. Francis Mitchell.
100.— Perspiration—Night Sweats—Some Thoughts. Ben. H. Broduax.
101.— Inflammation of the Knee-Joint. Herman E. Pearse.

New York Medical Journal, October 7.

102.—*Report of Five Cases of Scoliosis and One Case of Flat Foot Treated by the Teschner Method. Louise Erich.
103.—*Acute Suppurative Processes in the Faucial Tonsils. J. L. Goodale.
104.—*Tonsillar and Circumtonsillar Abscess. George A. Leland.
105.—*The *Amœba editata* in Disease. Henry Gereon Graham.
106.— Purpura Rheumatica. Remarks. Two Cases in the Extremes of Life. W. L. Johnson.
107.—*Primary Lesion of Tuberculosis: How Located. W. H. Weaver.

Medical News (N. Y.), October 7.

108.—*Further Observations on Treatment of Congenital Dislocation of the Hip. Royal Whitman.
109.—*Sanitaria in Treatment of Tuberculosis. Vincent Y. Bowditch.
110.—*Vaginal Celiotomy; Its Scope and Limitations. J. Riddle Goffe.
111.— Fracture of the Femur; Convalescence Complicated by an X-Ray Burn. J. C. Stinson.

AMERICAN.

1. **Spinal Tumor.**—Putnam and Warren report three cases of spinal tumor operated on with more or less advantage, and review the history of this condition. The number of cases published operated on amounts to 33, not including the cases of pressure paralysis following Pott's disease or Starr's case of extradural tubercular tumor. Of the 33 operations, 7 recoveries are reported, and 10 where more or less improvement followed, though in only 5 of these was the improvement permanent. Two of the recovered cases are insufficiently reported to allow us to be sure as to the outcome, and in one other case, a sarcoma, the eventual result is perhaps uncertain. In 10, possibly 12, cases operation seems to have hastened death from meningitis, septicemia, hemorrhage, shock, etc. In 9 cases the operation seemed to have little effect either way. The best results were in 3 cases of fibroma, one each of psammoma, lipoma and sarcoma, and in 2 of echinococcus. In no case has operation been done apparently on a mistaken diagnosis. The range of surgical possibilities and the prognosis of these cases are difficult questions. It is probable that, as a rule, the prospect is better when the paralysis develops slowly, and it is sometimes a puzzling question to decide whether or not operation is justifiable. The authors discuss the localization of symptoms, and allude especially to the newer studies of Head on the areas of sensibility.

3. **Aneurysm of the Aorta.**—The paper by Hare and Holder is a careful study of the cases of aortic aneurysm in medical literature, especially those of the ascending arch, the causes, symptoms, etc. In conclusion they call attention to the following facts, which they think are noteworthy: 1. The far greater frequency of this lesion in males than in females. 2. The far greater frequency in involvement of the ascending portion of the arch than of the other portions. 3. The fact that aneurysm of the transverse and descending portion of the arch seems to be about equally frequent. 4. That in a large proportion of cases death did not ensue from rupture, but from pressure by the growth. 5. That syphilis does not seem to play so large a part as an etiologic factor as is usually supposed, although the evidence is negative rather than positive, since it is possible that many of the cases which are assigned to trauma as the cause are really dependent on syphilis, in that this disease had primarily weakened the aortic wall so that injury readily brought about aneurysm.

6. **The Wintrich Tracheal Sound.**—Under certain pathologic conditions the vibrations of percussion-stroke will be communicated to the large bronchi and involve the column of air in the trachea, causing two sounds to be conducted to the examiner's ear, one from the thorax through the atmosphere and another through the trachea and nostrils or open mouth. Wintrich found that while the mouth was open the percussion-note over cavities became more clear and tympanitic and higher in pitch, the pharynx acting as a resonator over the column of air in the trachea. The implication of the column of air in the trachea can be recognized with closed mouth when the examiner will compare the sound transmitted directly through the air to his ear with that heard when the ear is close to the patient's nostrils. The sound heard at a distance is dull, high in pitch, and short in duration; that at the nostrils is tympanitic, high-pitched and longer. This modification is not noticeable with light percussion over the base of the consolidated lung because of the distance from the large bronchi, but by striking a firm blow with the palmar surface of the ends of the metacarpal bones, the tracheal sounds can be demonstrated with infiltrated base of the lung, provided the bronchi are not stopped. It may be of service sometimes in differentiation between pulmonary consolidation and pleurisy with effusion. Hoover has never seen it in the latter. In a normal adult, percussion over the upper sternum will not give the tracheal sound, but if the medium between the sternum and the trachea is increased in consistency, we will have a clear tracheal tone. He reports several cases where this was of service in diagnosis, mostly of mediastinal disease. There are certain precautions necessary in testing these signs. The chin should be elevated, the patient be instructed to take a deep breath and continue it after the thorax has reached the height of its excursion, thus keeping the vocal cords apart and permitting the passage of sound and air through the trachea. The patient should be told to hold his mouth open, with tongue protruded, and the examiner should percuss gently over the manubrium, with the ear directly before the patient's mouth. When the tracheal sound is present, it is recognized by its characteristic metallic resonance and issuance from the mouth. Even inexperienced investigators can recognize it. The tracheal sound is produced by percussion over the upper portion of the sternum whenever there is a solid or liquid mass which will communicate the percussion vibrations to the bronchi. This will occur in mediastinal tumor, aneurysm of the ascending arch of the aorta, and pericarditis with effusion, provided there is a sufficient amount of fluid to distend the pericardial cul-de-sac over the origin of the large vessels at the base of the heart. The tracheal sound from percussion of the manubrium is not present in consolidation or cavity of the upper lobes of the lungs, nor is it present in pleurisy with effusion. In searching medical literature, Hoover can nowhere find any mention of this sign in connection with tumor of the mediastinum. It has been of considerable service to him in differential diagnosis. It should be of assistance to the surgeon in determining as to the advisability of operation on tumors of the neck.

11. **Mechanical Treatment of Ptosis.**—Heckel describes a device for keeping up the fallen upper lid, and illustrates it with figures showing its effect. It is simple in construction, consisting merely of a bent gold wire which can be soldered to any spectacle frame. The final adjustment must be made by the attending surgeon, so as to secure accuracy and comfort. On account of its elasticity, it not only enables the patient to wink, but also to close the eye. It is not irritating, as shown by the length of time and constancy with which it has to be worn.

13. **Cataphoric Treatment of Carcinoma of the Breast.**—Massey reports four cases of carcinoma of the breast treated according to his method of nascent mercuric and zinc oxychlorids developed within the growth by a powerful electric current, the patient being under an anesthetic. These substances are developed by electrolysis from metallic mercury and zinc inserted into the tumor, the pure mercuric salt requiring the use of a gold electrode to diffuse it. The result, he claims, is a radiation of those powerful protoplasmic poisons, by cataphoresis, in all directions from the electrode to distances readily determined and controlled. The method consists of an electric interstitial diffusion into, through and beyond the cells of the malignant growth, of chemical substances fatal to the germs of cancer, causing an area of total destruction corresponding in limits to the apparent limits of the growth, surrounded by a zone of infiltration reaction within which colonies and prolongations not evident to the senses are destroyed without harm to the healthy tissue. After the reading of his paper a lively discussion occurred between the author and Dr. W. W. Keen in regard to the method, the latter believing it ineffectual and leading to delusive hopes.

15. **Toxalbumins.**—The following are the conclusions of Dr. Shiek's paper: 1. Bacteria themselves are not always essential to the production of diseases resembling those ordinarily produced by micro-organisms. 2. All soluble poisons produce similar lesions. 3. It is possible, under natural conditions, for an individual to become poisoned with the toxins, exclusive of the bacteria. Generally, however, this does not occur. In drinking-water, the poison is well diluted; in foods, we do not, as a rule, eat those in which putrefaction has progressed sufficiently for the toxin to have been developed. 4. The trend of present experiments would seem to indicate that a special antitoxin for each toxin is not necessary; but, rather, some substance which in all cases will act as a stimulant to the lymphoid tissues of the organism. 5. Considering the similar symptoms and lesions of all intoxications, one general line of treatment may be followed, to be modified to suit individual cases.

22. See original paper in this JOURNAL, March 25, p. 649.

23. **Imperforate Os and Lacerated Perineum.**—Pearse here reports a case of complete closure of the os following childbirth, relieved by operation and subsequent operation for perineal tear.

24. **Yellow Fever.**—The Sternberg-Sanarelli-Novy controversy is discussed by Gradwohl, who concludes that the weight of opinion goes to support Sanarelli's claims.

25. **Diphtheritic Pneumonia.**—Jennings reports a case of pneumonia developing on an apparent laryngeal diphtheria, with very severe symptoms, and treated by the injection of 2000 units of antitoxin, with success. Examination and inoculation experiments of the secretions coughed up showed virulent Klebs-Loeffler bacilli.

26. **Mercurial and Iodoform Poisoning.**—The case reported by Floyd was supposed to be syphilitic gangrene, but from the results of treatment and other facts, he concluded that it was a very aggravated case of mercurial and iodoform poisoning.

32. **The Offending Middle Turbinal.**—Pynchon here describes the conditions due to pressure from hypertrophy of the middle turbinal, to which he credits largely hay fever and asthma, and possibly also hydrorrhea. He describes an instrument which he has devised for trephining the part, and illustrates it.

33. **Fibrinous Rhinitis.**—The significance of fibrinous rhinitis as an infectious and non-infectious condition is here described by Wishart, who reports 7 cases, in 5 of which he found the diphtheria bacillus. He concludes his paper as follows: "It would appear that observers of this interesting disease thus fall readily into three classes: 1. Those who consider diphtheria and fibrinous rhinitis to be distinct diseases. 2. Those who consider there is but one disease, but that the degree of contagiousness varies, so that we may safely neglect to isolate such cases where no clinical and bacteriologic evidences of diphtheria are to be found. 3. Those who would isolate every case. In view of the fact that cases possessing a membrane bacteriologically innocent have apparently communicated diphtheria to others, are we not warranted in thinking that the Klebs-Löffler bacilli were really present somewhere? If so, we are forbidden thereby to abandon the isolation of these cases until a series of bacteriologic examinations have been made, which practically means until the disease itself has disappeared. In conclusion, we may fairly consider that the accumulated evidence proves the following points: 1. Fibrinous rhinitis and diphtheria are not distinct diseases. 2. All cases of fibrinous rhinitis need the same precautions as to isolation that diphtheria requires."

34. **Acute Septic Rhinitis of Childhood.**—Somers believes that the septic rhinitis of children in this country is due in the majority of cases to implantation of the ordinary pus-organisms and not to specific infection. He describes a case, and speaks of the general symptomatology and treatment of the disorder.

36. **Anastomoses of the Alimentary Tract.**—Allen discusses the subject of the relief of disordered conditions, obstructions, etc., of the alimentary tract. In case of non-malignant pyloric stenosis he favors Loreta's operation or the longitudinal incision rather than anastomosis. When anastomosis is necessary, we should avoid the more complicated operations which may lead to unpleasant adhesions, besides requiring more time and being more difficult. He speaks with favor of the proposed operation of Von Hacker, which seems to avoid these dangers, and he prefers suture to the mechanical appliances, such as the Murphy button, when it is practicable. In anastomoses between the intestines and stomach the posterior wall is the preferable location. Anastomoses between the gall-bladder and intestines are, in his opinion, rarely required, and if done are liable to produce infection of the biliary tract. Intestinal anastomosis for intussusception is rarely required, and in cases where the condition is so advanced as is often the case he prefers to make an artificial anus rather than an anastomosis. The point that he would especially make is to imitate nature so closely as possible.

39. **Cervical Suppuration.**—Hamann describes Ludwig's angina and notices its treatment, and calls attention to the peculiar form of cellulitis described by Reclus in 1896, and called by him "woody phlegmon." It is characterized by an extensive induration of the anterolateral region of the neck, slow in progress, without fever or constitutional symptoms. The ordinary signs of an acute abscess are absent, and it is evidently a chronic inflammatory process.

40. **Oral Auscultation.**—Wagner calls attention to the value of auscultating the oral cavity, which he thinks is best done by having the patient close the lips firmly about the bell of the stethoscope and stop breathing at the end of a passive expiration, then compressing the nostrils, the physician having previously adjusted the ear-pieces of the instrument. He tabulates the results of his observations of 100 cases, and, judging from this, he concludes that when the normal tones as they occur in the large vessels are heard in the mouth they have no special significance except that they are intensified by the presence of mediastinal changes, and tumors favor the sounds. The diastolic murmur is found only in aortic insufficiency, and must be transmitted from the aortic arch to the bronchus and not from the valves. The systolic murmur is heard only when there are evidences of aneurysm or dilation of the aorta involving the arch. He considers both the systolic and diastolic murmurs when heard in the mouth as of importance as an aid in diagnosis. The venous murmur of chlorosis is not heard in the mouth.

42.—See abstract in JOURNAL, May 13, p. 1061.

44. **Blindness from Methyl-Alcohol.**—Gifford reports a case, to add to the few already published, of blindness caused by the ingestion of wood alcohol. The blindness was permanent. Other cases occurred in the same neighborhood. The ophthalmoscopic examination showed marked optic atrophy. He does not agree with Holden's view, that the blindness is due to disturbances in the retinal ganglion cells, but considers it a primary affection of the optic nerves.

47. **Strabismus.**—The theory of Valk is that strabismus is due almost entirely to disturbances of the balance of power of the straight muscles, and that innervation or position of rest has nothing to do with it. He divides strabismus into two classes. In the first, amblyopia, always congenital, is the prime and sole cause, vision less than 20-100 associated with a normal balance of power in the lateral moving muscles. Hence, with the loss of fusion power, or the guiding sensation, the eye quickly turns in the direction of the most powerfully acting muscle, namely, the internus in convergent squint, and the externus in divergent squint. In the second class we have some refractive errors, either hyperopic or myopic, with or without an astigmatism, and with this a weakness of some of the straight muscles of the eye. In the first class the best we can do is to produce a cosmetic effect. In the second we have to correct the refraction and then decide on the operation. Each case must be carefully studied by itself, and education of the squinting eye will be of great value.

49. **Errors of Refraction.**—Hefflefinger describes the common ocular defects requiring correction by glasses, and states that the first use of lenses for correcting vision was by Charles II of England. He insists on the danger of relying on opticians in the selection of glasses.

50. **Paroxysmal Tachycardia.**—This paper is made up of a description of several cases that have recently occurred in the practice of the author. In all relief was quickly obtained by strychnia and morphin and nitroglycerin injections and the use of other sedative mixtures and relief to the loaded bowel. The general treatment which he recommends is the use of bromids, valerian, and other antispasmodics and the curative treatment directed to the removal of the cause.

52. **Treatment of Cancer.**—The most notable point in Sterman's paper is his advocacy of the remedies of hereditary cancer doctors.

54. **The Art of Diagnosis.**—In this paper Benedict reviews the various methods of diagnosis, especially the modern ones so largely depended on, and points out certain errors that are liable to be committed and that have been committed in the past. He concludes with a plea for a common-sense spirit in diagnosis that will lead from symptoms to immediate cause and will stop there unless other circumstances warrant the drawing of more general conclusions.

55. **Throat Tuberculosis.**—Strangeways lays stress on a pallid appearance of the pharynx and dull gray aspect of the larynx, with faulty approximation of the cords, as an especially valuable sign of incipient tuberculosis. As regards tuberculosis of the larynx, he thinks that its frequency is about one in five cases of the disease, most common in men and rarely appearing in children. Its prognosis is bad; we have not conclusive evidence of a dozen cures altogether, and treatment is necessarily palliative. Constitutional treatment is required, according to the best judgment of the practitioner. Local

treatment consists in spraying, swabbing, cauterizing and curetting. He has had no experience with cauterizing, and does not advise it. Menthol applied with a swab is an excellent application, relieving pain and stimulating. Silver nitrate has been a favorite, but lactic acid is now more in fashion. Cocain or orthoform may be necessary at times, when other remedies fail, or for making the application of remedies possible.

60. **Left-Sided Appendicitis.**—Ground reports a case in which the colon was dislocated, and the long appendix caused the abscess to be on the left side, and a fatal septic peritonitis killed the patient. He points out that the interest of the case is in the matter of diagnosis. We are so accustomed to localizing appendicitis in the right iliac region that we hardly look for it elsewhere; we must bear in mind that anomalous and complicated forms do sometimes occur. He lays great stress on nausea as a symptom, and thinks its absence goes a long way toward dispelling the diagnosis of active appendicular lesions.

67. **Obstetrical Teaching.**—The subject of instruction in obstetrics is discussed by Edgar, who makes a special point of insisting on the principle of *primum non nocere*.

68. **Placenta Previa.**—Baker reports five cases of placenta previa, two occurring in primiparas aged 24 and 31 years. In both cases the condition was fatal, though in one case one of a pair of twins survived. The mothers made tedious recoveries.

69. **The Vaginal Route in Pelvic Operations.—The** author here points out the conditions in which he would preferably employ the vaginal route in operation. Thus, in cases of prolapsed uterus, not curable by plastic, perineal or vaginal operations in a fleshy woman past the menopause, he prefers vaginal hysterectomy to an abdominal hysterectomy or ventrofixation. He would also use this operation in cases of cancer of the cervix or body in its early stages. He makes a vaginal incision in preference to an abdominal in dealing with many pelvic adhesions that require cutting operations. He prefers it also in the early stages of ruptured ectopic pregnancy. He reports the last case of this kind, where he operated by the abdominal route with bad results. He prefers the vaginal route in dealing with pelvic infections when pus accumulations exist low down in the pelvis. He makes a vaginal incision in every case of pyosalpinx before trying abdominal enucleation, and he would use it always in the treatment of abnormal Graafian follicle and corpus luteum cysts.

70. **Dermoid Cysts.**—Fritts reports a case of dermoid cyst of the ovary in which a portion of the contents escaped into the abdominal cavity, without bad results. The patient was 11 years old.

71. **Causes of Dystocia.**—Some of the common factors in the production of dystocia are discussed by Cutts, such as an obliquity of plane of superior-strait pelvis to axis of the body; lordosis of lumbar vertebræ, more especially the undue prominence of the last lumbar vertebra; condition of the pubes; obliquity of the plane of the pubes to the plane of the superior strait of the pelvis; length of the pubes and sub-pubic ligament; thickness of the pubes. The treatment of the condition in which engagement of the presenting part is interfered with should be version as soon as the cervix is sufficiently dilated. If delay is practiced, the membranes rupture, and the uterus contracts on the fetus in such a way as to make version impossible and dangerous, and a high forceps delivery is required. He reports here two cases representing some of these conditions.

77.—See JOURNAL, September 2, p. 621.

78.—Ibid.

79. **Typhoid Without Intestinal Lesions.**—The case here reported adds one more to the list of those in which the bacillus of typhoid has been demonstrated without finding lesions of the intestines. The case was demonstrated positively by the Widal test. The author gives a brief review of the 20 cases previously reported.

80.—See JOURNAL, September 2, p. 622.

81.—See JOURNAL, ¶ 33, p. 969.

85. **Neuroses from Oophorectomy.**—Davis' article discusses simply the general subject of changes following the removal of the ovaries, and reviews the literature to some extent. He advocates conservatism in this operation, the preservation of at least a part of the organ, which has been his practice of late years.

86.—See JOURNAL, April 15, p. 839.

90. **Fracture of the Ribs.**—Borck describes his methods of treating rib fracture as follows: "I put my patient on a stool or allow him to stand erect. I fasten into the ceiling or door-frame over his head a pulley from which is suspended an ordinary trapeze; let him grasp the bar with both hands, and have him slowly elevate and extend his arms above his head, assisting him with the pulley in one hand, and directing him to breathe easily and slowly. If necessary, I help with my other hand in bringing the fragments into apposition; if the angle is outward, a slight pressure on it with the flat hand will answer; if inward the pressure must be applied to the extremities near the sternum and vertebræ. As soon as the fragments are in proper position the pain will cease, when the rope is tied somewhere and the patient kept quiet until the dressing is put on, which consists—according to circumstances—of a soft pad of absorbent cotton, between the ribs, i. e., on the intercostal space, and never on the ribs. I have my plaster-of-Paris bandages ready—these are the only fractures for which I employ this material; some other kind may do as well—the patient is again directed to take slow and deep inspiration and expiration and at the close of each expiration I make a quick turn with the bandage around the chest, beginning over the lowest fractured rib and continuing until I have finished a light Sayre's jacket. After the dressing is dry the patient is released. He may then go to bed, or rest in a chair, and in a short time thereafter can walk about with comfort." He never keeps a patient in bed with a broken rib. The treatment above set forth proved all that was necessary in uncomplicated cases.

95. **Iodoform.**—Thompson discusses the question given in the title of his paper, and answers it in the negative, believing that we have a better substitute in europhen, which he commends from his experience.

98. **Limitations of Digestive Practice.**—After general remarks on the limitations of specialties, Benedict states that the digestive specialist must be a physiologic chemist and a diagnostician in every regard. Many cases stand in the doubtful ground between gastric, nervous, and other disorders. This is especially the case with dyspepsia in its various forms. Eye strain is a subject on which much has been written, and some false notions have arisen in regard to it. Undoubtedly, reflex nausea and vomiting have been relieved by glasses, but just as truly have refractive errors complained of, been done away with by attention to other organs than the eye, or even by improving the general health, but it would be absurd to assert that real refractive errors can be relieved by stomach treatment or real digestive troubles can be cured by attention to the eye respectively. He alludes also to the lesions of the thyroid and their symptoms, and believes that they may be claimed by the gastric specialist as belonging in his territory. Other disorders which fall more or less into the hands of the gastric specialist are lithemia, diabetes mellitus, certain forms of neurasthenia, etc., but they can not trespass from these grounds over into the region of rheumatism, arthritis, or all the diseases diagnosed by urine examination. These cases are mentioned to illustrate that specialists, like others, must include some disorders and cases when it would be manifestly unfair to allow analogy to its limit. Considering that the gastric specialists deal with viscera rather than with accessory organs, the number of these doubtful cases is small.

102. **Teschner Method in Scoliosis.**—The method originated by Dr. Teschner of New York, of using exercises to correct spinal curvature by toning up the muscles, is described at length in Dr. Teschner's words in Erich's paper. It consists especially in the use of dumb-bells and bars, employed in swinging or raising in such a way as to strengthen the muscles antagonizing the deformity. The exercises are described at length. The patients are exercised to their full endurance at each séance, and the amount of work performed at any time depends upon the previous record. In Dr. Teschner's cases improvement was very rapid and noticeable within the first two or three weeks, and was attended also by improvement in general health and increase of weight and marked increase of lung capacity, and a beneficial effect on the heart's action,

shown by the diminished frequency of the pulse and the increase of pulse-pressure after each treatment. The effect on the nervous system by the cultivation of muscular precision and endurance is marked, and the improvement generally continues long after active treatment has ceased. Dr. Erich's method was a modification of this to the extent that the exercises were never carried to fatigue or discomfort and the weights used were not so large as those employed by Teschner. Improvement was, therefore, slower, six weeks being required generally to perceive its beginnings, but she feels justified in this change, as she considers it safer and more comfortable, and the risk of overdoing the patient's heart is eliminated. Five cases are reported which were under treatment for several months each. In one case there were perfectly flat feet which were never free from pain, and she attributes the cure of these also to the exercises employed by the Teschner method.

103. **Tonsillar Suppuration.**—After recalling a former communication, Goodale states that the purpose of the present article is to review the eight cases that have thus far come to hand with the hope that their study may throw some light on the following subjects: 1. The etiological relationship of these intrafollicular abscesses to special micro-organisms. 2. Their relationship to peritonsillar inflammation. 3. Their prognostic significance and the possibility of recognizing their presence from clinical appearances. In each case notes were made with regard to the following points: 1. The clinical history. 2. The macroscopic appearance of the tonsils. 3. The micro-organisms cultivated from the surface of the tonsil previous to excision. 4. The histologic phenomena, with special reference to: *a*, the intensity of the proliferative phenomena; *b*, the number and size of the suppurative foci; *c*, the amount of fibrinous exudate in the crypts, and finally, *d*, the number and character of the leucocytes in the interfollicular lymph-channels and connective-tissue spaces near the base of the organ. He describes his technic and reports the eight cases in detail.

104. **Tonsillar and Circumtonsillar Abscesses.**—Leland first recalls a case reported by him in 1893 in which he introduced his finger into an abscess cavity and tore out the opening, thus thoroughly evacuating its contents, with surprisingly good results. Since that time he has been led to use the sterilized index finger in other cases of tonsillar and subtonsillar suppuration as an exploratory and operative instrument. By the use of the finger tip, after the tonsil has been split with a sickle knife, the large and distended crypts can be frequently made out and the sinus followed upward and outward through the tonsil into the circumtonsillar cavity. He has frequently been able to determine the exact size of the abscess in this way and in large ones to put the finger down and tear the tonsil outward, thus giving an exit for the pus at its lowest level. He has tried a stiff-pointed probe for this purpose, but has not found it so satisfactory. This operation may sometimes leave an objectionable scar, but it does not leave any question as to the condition of affairs or as to the complete granulation of the cavity from the bottom. In the cases operated on which he has been able to follow up there has been no recurrence. Another advantage is the quick recovery, and he reports several cases illustrating this. Sometimes, he says, the finger brings up against a tensely filled cavity which it is impossible to enter. This, however, may frequently be opened the next day by this method or by the blunt point of a knife passed through by pressing it upward and outward. This starts the pus, which makes subsequent procedure easy. He reports here, however, one fatal case where this condition existed, but the patient was removed out of his reach before the abscess was opened, and he is confident that it could have been opened had he been able to thus operate on it the following day. He does not publish this method as new, for he has heard from an older surgeon that fifty years ago it was customary to open circumtonsillar abscesses with the finger, but he holds that it is a thorough method that can be made painless under slight general anesthesia, that the opening is made through diseased tissue, that the pus tracts and cavity can be found earlier than with ordinary methods and that much time and suffering are saved.

105. **Ameba Ciliata in Disease.**—In a lengthy paper under this title running through two numbers of the *New York Medical Journal*, (September 30 and October 7), Dr. H. G. Graham calls attention to the pathogenic importance of ameba ciliata as a carrier of microbes in the system. He thinks that the organism ordinarily has probably little or no pathologic significance in itself, but the protection it affords to germs from various destructive agents and its power to penetrate tissues render it highly important. When there is an invasion of a vital organ resulting in interference with its normal function, the disease becomes complicated and aggravated. Some of the white corpuscles in the blood and some of the pus corpuscles in the urine in various infectious diseases and in some subacute diseases are, he holds, nothing more nor less than the ovules of this same ameba, and he suggests that a probable function of the spleen is the arrest and destruction of embryonic forms of this and other minute fresh-water organisms. (See also editorial on this paper.)

107. **Primary Lesions of Tuberculosis.**—The theory of the primary infection of tuberculosis by inhalation is questioned by Weaver, who thinks that it is more generally by way of the intestinal tract. The fact shown by Birch-Hirschfeld, that the area of lung tissue in the apex of the lungs in which respiration is least active and the air most stagnant is the usual location of the primary tubercular lesions, is held by him to support his view. He can not see how dust infection could be so general in these dead air-spaces. This region, however, is in close anatomical relation with the thoracic duct, carrying the bacilli-containing chyle from the digestive tract. His conclusions are that: "1. The infection comes through food or moist germs inhaled and swallowed, and possibly through infection of tonsillar tissue. 2. In the great majority of cases the infection occurs in the posterior portion of the lung apex, that being the most vulnerable point, as a direct result of the discharge of infected chyle into the vena cava. 3. Should that portion of the lung apex be healthy, and not a suitable nidus for the germs, they may pass on with the current of blood to find lodgment in some other area, unless the blood has exerted its bactericidal power over them, when they may be removed by the action of the phagocytes (Klebs). The theory of Cornet has not produced the results expected in the prophylaxis of tuberculosis. Then why consider such a rare possibility, when we know that there is a stream of bacilli constantly flowing into the blood-current through the lacteals, capable of producing the infection in the lungs?"

108. **Congenital Dislocation of Hip.**—The etiology of congenital dislocation of hip is somewhat conjectural, though the most reasonable theory is that of intrauterine pressure on the flexed thigh. At birth it is practically a subluxation, and it may be assumed that with its immediate replacement, development might proceed normally. When the diagnosis is usually made, however, at the time the child begins to walk, the changes have taken place and these increase with each successive year, producing a deformity and disability that is hardly appreciated by most of those who have discussed the subject. The operative methods are the functional weighting method of Lorenz, and the open operation of Hoffa, as modified by Lorenz. The disadvantages of the former, the possibility of mistaken diagnosis of replacement, etc., are mentioned by Whitman, and he regards it as a preliminary and tentative procedure that must in most cases be supplemented by the open operation. It is readily consented to, causes but little inconvenience, and may in itself produce marked improvement in certain cases. He reports his own experience with twenty-one patients, a total of thirty-two operations with three complete cures, following the operation of Lorenz except in the use of manual traction in place of instrumental. He considers the method, however, quite inadequate in final operations. The chances of success are excellent in very young subjects, but diminish rapidly with the age. His patients being hospital patients, in the nineteen operations he has performed by the open method, only seven were preceded by simple replacement. He gives the details of the method used as modified from that of Lorenz, as follows: The joint is opened by a lateral incision just below and one inch to the outer side of the anterior superior spine. This exposes the fascia, through which the line of junction between the tensor vagina femoris and the gluteus medius muscles may be seen. When these are separated from one another the capsule of the joint is at once exposed, often covered in part by the fibers of the iliopsoas muscle. The capsule is opened by an incision in the line of the neck of the femur and through

this the head of the bone may be exposed after the division of the ligamentum teres, if it be present. The finger may then be passed through the opening downward and forward to the acetabulum and by its side a strong cervix dilator is inserted with which the capsule is thoroughly stretched, especially the anterior layer which covers the acetabulum. The acetabulum is excavated to the extent that seems desirable by means of a sharp spoon, the bayonet-shaped instrument being the most convenient, after which the head of the bone is replaced. The wound is closed, except for a small gauze drain inclosed in rubber tissue, and a plaster-of-Paris spica bandage including the foot is applied with the leg in an attitude of moderate abduction, complete extension, and slight inward rotation. There is, as a rule, little difficulty in the reposition when the primary operation of forcible correction has been performed or when the accommodative contractions have been thoroughly overcome by preliminary or immediate traction, but in older patients a more extensive division of the capsule may be required. Ordinarily the operation may be performed in less than half an hour, there is little shock, and the subsequent discomfort is slight. As a rule, the patients remain in bed but a week, and are often about in a chair in a few days. The after-treatment of the open method is important and, in two cases, finding the acetabulum of full size, he simply cut and dilated the capsule and replaced the femur without excavating the acetabulum, but the success of these was not satisfactory. In his nineteen open operations, fifteen were performed within the last year, so the time is too short to report results. In the total of his cases treated by both operations, the result in four is practically a perfect cure. In two cases the result is extremely good and in two it may be called good. The object of his paper is to establish the proposition that congenital dislocation of the hip is a deformity for which positive treatment is indicated at the earliest possible time.

109. **Sanitaria for Tuberculosis.**—This article, read before the Ontario Medical Association by Bowditch, gives the history of the sanatoria treatment in Massachusetts, especially the Rutland and Sharon institutions. He especially advocates the founding of sanatoria in the vicinity of large cities and towns in properly selected sites for the benefit of those who can not for any reason go far away.

110. **Vaginal Celiotomy.**—Goffe reports the results of his experience in vaginal methods of operation for pelvic diseases. The anterior operation is the one which he prefers, and it consists in making a transverse incision through the anterior vaginal fornix corresponding to the incision employed in the complete vaginal hysterectomy. In addition to this a longitudinal incision is made at right angles to it, through the entire length of the anterior vaginal wall. The bladder is then dissected from the uterus and also from the vaginal wall, to the extent of an inch or an inch and a half from on each side of the longitudinal incision. Through this opening ample space is afforded for any work on the uterus and its appendages. When he first began with this method he feared more or less severe bladder symptoms, but has not met with the first instance of this as yet. He has treated, in this way, almost every condition to be met with in the female pelvis, from simple retroversion with adhesions, to prolapsed and cystic ovaries, unilateral and bilateral salpingitis, ectopic gestation, fibroid tumors of the uterus, and dermoid cysts. The patient is not conscious of having had any incision made, and the operation leaves no scars. He gives, more or less fully, the accounts of certain special cases in which this operation was performed to advantage. (See also p. 933.)

FOREIGN.

British Medical Journal, September 23.

A Discussion on the Pathologic Significance of Sympathetic Irritation, and Its Connection, if Any, with Sympathetic Ophthalmitis. F. RICHARDSON CROSS and others. Cross reviews the subject of sympathetic irritation and its connection with sympathetic ophthalmia, discussing the symptoms, causes, pathology, prognosis and complications, advising as good practice, the removal of the eyeball, thus doing away with any possible source of mischief. As regards the pathology, he holds that neither the reflex neurosis nor the microbic theory were ever definitely proven. There is a possibility that, with future and more perfect research, various kinds of microbes will be found, implicating, if not actually causing, sympathetic complications. He thinks we should work carefully in the direction, by seeing whether any general infection of the system was coincident with septic uveitis.

A Discussion on the Visual Tests. H. CALEY, E. LANDOLT and others.—Landolt criticizes Snellen's test types now commonly used for testing vision, especially on account of the unequal difficulty of distinguishing certain of them. He proposes in place of them a black circle on a white surface, presenting in some direction a gap, which, for the unit of acuteness of vision corresponds to an angle of 1 minute. He has given this circle the same thickness as the corresponding letters in Snellen's types and has chosen the dimensions in such a manner that, placed at a distance of 5 meters, they correspond to the following 15 degrees of visual acuity: 0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.25, 1.50, 1.75 and 2. The patient can indicate by a motion of his hand the direction of the gap, and they have the advantage of being suitable for showing in a mirror without requiring to be printed inversely, and the greatest advantage of all is that they are a simple test for acuteness of vision, excluding as much as possible intellectual functions, and they are the same for illiterate as for the educated.

Color Blindness and Defective Sight in the Mercantile Marine. T. H. BRISCOE.—The author discusses the figures of examination of sailors in the Board of Trade reports, showing the proportion that have failed in the color test, and criticizes the inaction of the Board of Trade in regard to this important matter. He gives as ground for his criticism a formidable list of disasters which he thinks are possibly or probably due to this defect.

The Asphyxial Problem in Convulsive Seizures. J. F. BRISCOE.—The pathology of convulsions includes the possible arrest of the pulmonary circulation and death by suffocation. Briscoe calls attention to this fact, noticing the facts of the physiology of asphyxia, and, as a practical deduction, shows the value of blood-letting in this condition, illustrating it by a case which he reports.

On "Double Consciousness." THEO. B. HYSLOP.—The subject of double consciousness or double personality is discussed by Hyslop, who classifies the cases under the following seven types: 1. Those occurring in early life, and in which the abnormal state is preceded by night terrors, somnambulism, or both. 2. Types in which the abnormal state is preceded by profound sleep, and in which the normal state is only again reached by sleep. 3. Types due to temporary or periodic amnesia acquired as the result of accident, injury or disease. 4. Epileptiform types. 5. Insane types. 6. Hysterical anesthetic types. 7. Types in which during the abnormal state, the subject assumes the possession of a mediumship. He illustrates several of them with cases. As regards the first of these, he thinks that there is something to be said in favor of the hypothesis that double consciousness is only complete somnambulism. The successive awakening to the senses constitutes a gradation from ordinary sleep to complete somnambulism, giving the subject studied the appearance of leading a dual life. The second type is illustrated by Weir Mitchell's case of amnesia following protracted sleep and remaining thus until after a second similar attack. The third type is one that is not unknown in asylums, and he reports a case. The epileptiform, the fourth type, is also a familiar one, and, as an example of the fifth, he refers to the Azam case. The paper is not easy to abstract, dealing, as it does, with complex problems, but is well worth reading.

Lancet, September 23.

On the Regeneration of Nerves. ROBERT KENNEDY.—This paper gives accounts of four cases of secondary suture of nerves, with deductions from the results of operations and microscopic findings. Kennedy concludes that the early return of sensation must be regarded as indicating a restored conductivity of the divided nerve. His deductions from the microscopic examination are as follows: 1. Degeneration—*a*. That there was no evidence of ascending degeneration of the kind described by Krause after interruption of a nerve. *b*. That the old axis-cylinder and myeline sheath were destroyed in the peripheral segment and in the ultimate portion of the central segment. 2. Regeneration—*a*. That young nerve-fibers were developed in

the peripheral segment as well as in the end of the central segment, and that, even while there was no connection between the two ends. *b.* That these young nerve-fibers originated within the old sheath of Schwann from the protoplasm and nucleus of the interannular segment. The spindle-cells formed from the protoplasm and nuclei of interannular segments elongated and united to form protoplasmic threads, with the elongated nuclei attached to their sides. The central portion of the protoplasmic thread developed into the axis-cylinder, while myeline was deposited in drops in the protoplasm surrounding the newly formed axis-cylinder. The protoplasm in which the myeline was deposited remained with the nucleus as the neuroblast of the new interannular segment. *c.* That so long as conductivity of the nerve was not re-established the development of the fibers proceeded only to a certain stage, and as the new fibers, three months and eighteen months subsequently to division, presented identical characters, this stage might be regarded as a resting-stage depending for its further development on re-establishment of function. *d.* That cicatricial intercalary segments reuniting the ends of a divided nerve might be permeated by young fibers from end to end without re-establishment of function, if the amount of cicatricial connective tissue present in the mass was sufficient by its pressure to prevent the passage of impulses.

The Prevention of Sickness After Anesthetics. J. BLUMFELD.—According to Blumfeld, the after-sickness following operation when anesthetics are used depends largely on the idiosyncrasy of the patient, the secretion of mucus and the length of operation. He says: "In conclusion it may be said that some of the chief points to be attended to in the avoidance of after-sickness are: 1. Use as little of the anesthetic as possible consistent with perfect anesthesia. 2. Wash out the stomach at the close of operation when much mucus has been swallowed. 3. In long operations substitute chloroform for ether after three-quarters of an hour. 4. Move the patient about as little as possible during and after operation. 5. Place him on his right side in bed with head only slightly raised. 6. Give nothing but hot thin liquids in small quantity for at least eight hours after. 7. Do not alter the temperature of the room for some hours. With proper attention to these points one-third of the patients operated on will be free from after-sickness, and for short operations the proportion will be much higher still. In fact, after all administrations up to twenty minutes, or not much longer, sickness will be found to be the exception."

Medical Press and Circular, September 20.

The "De Novo" Origin of Syphilis. JOHN A. SHAW-MACKENZIE.—This paper argues for the *de novo* origin of syphilis from promiscuous intercourse. He says we can not presume that all contagious or morbid poisons must have had an existence from the beginning, and that it is perfectly natural to assume that certain causes that gave rise to infection at first may still be in action.

Indications for Cesarean Section As Compared with Those for Symphysiotomy, Craniotomy and Premature Induction of Labor. PROFESSOR LEOPOLD.—According to Professor Leopold, the indications for Cesarean section as compared with those for symphysiotomy, craniotomy and premature induction of labor are: 1. Before term—when there has been one or more difficult labors caused by pelvic deformity, premature induction of labor is indicated when the pelvis is not too much contracted (conjugata vera more than 7 centimeters in flattened pelvis, more than 7.5 centimeters in the justo minor pelvis). The best moment for intervention is the thirty-fifth week of pregnancy. Good results are not to be expected unless the membranes remain intact and there is a head-presentation. 2. At term—craniotomy is indicated: *a.* When the child is dead, and labor does not advance, even when the pelvis is only slightly contracted. *b.* When the child is in danger, the contracted pelvis being an obstacle for spontaneous birth, forceps and version being too dangerous or impossible.

This rule is equally valuable only for hospital and home practice. The danger for the mother is too great to risk the Cesarean section or symphysiotomy when it is not quite sure that a living child will be born. *c.* When the child is in perfect condition, craniotomy will be performed only as an exception in hospital practice. But in private practice it is indicated when spontaneous birth, forceps and version are excluded and the termination of labor is necessary, the obstetrician, all circumstances duly considered, regarding Cesarean section or symphysiotomy too dangerous the conjugata vera must be more than 6 centimeters. In exceptional cases, when for private reasons it is important that the child is born living, should it be only for some minutes, the advice of a colleague is to be asked and the family of the woman to be acquainted with all the dangers accompanying the operation by which the child can be saved. The Cesarean section has absolute or relative indications. In pelves with a conjugata vera of 7.5 to 6 centimeters the indication is an absolute one. Cesarean section on relative indications requires the fulfilment of the following conditions: a spontaneous birth being impossible, forceps and version inadmissible, the child in perfect condition, and the woman either in a hospital or in circumstances quite as favorable as to the operation itself and as to subsequent nursing. When the circumstances are not favorable enough, craniotomy of the living child is to be preferred. Symphysiotomy is only indicated in pelves with a conjugata vera of 7.5 to 6.5 centimeters; the indications are therefore much more limited than those of Cesarean section and do not all regard the pelves of the second class. With this restriction symphysiotomy may compete with Cesarean section on relative indication, and require the same conditions. When these conditions are not fulfilled craniotomy must be performed. The choice between symphysiotomy and Cesarean section as relative indication depends on the experience of the operator. The results of both operations performed under the same conditions are almost equal for the mothewr as well as for the child.

Deutsche Medicinische Wochenschrift (Berlin), September 14.

Report of the Official Malaria Expedition. R. KOCH.—As mentioned last week in the JOURNAL, p. 929, Koch has become convinced that malaria can be exterminated in time by destroying all the parasites in subjects infected with malaria during the summer, before the arrival of the next summer. This can be accomplished with quinin, but not in the half-hearted manner in which it is usually administered. In his experience with 408 cases of bacteriologically confirmed malaria, he found that two doses of one gram each, given during the intermissions, were sufficient in most cases to break up the attack. The dose was doubled in the estivo-autumnal variety —which was usually very severe—and the appearance of the large ring-shaped parasites in the blood was the signal for it. To prevent relapses afterward one gram is administered every tenth day. Gosio is continuing the tests at Grosseto to determine whether this prophylactic dose is sufficient. The research confirmed in every respect what has already been established. The most careful search failed to reveal the parasite in any other living beings than man, the *Anopheles maculipennis* and the *Culex pipiens*. The latter must be included among the harmful mosquitoes. The sickle-shaped parasites were found in them, and Ross' brown bodies were noted on the surface of the stomach of two of the anopheles. Koch concludes that the principles of our present sanitary measures for the prevention and eradication of cholera, etc., must be extended to malarial infection, only with the advantage of a specific remedy, quinin, already in our hands.

Importance of Salt Water Bacteriologic Investigations. B. FISCHER.—The study of ocean bacteriology is a promising, hitherto neglected field and will add much to our knowledge of the conditions of life and vital manifestations of bacteria. It is not only important for hygiene, but general biology will also profit by it. We can already assume that the ocean bacteria are important factors in salt-water metabolism. The number of varieties of bacteria seems to be rather limited, and the shapes are different from those observed on land, resembling more the comma bacillus. Unicellular fungi abound. The number of bacteria increases with the distance from the surface to a certain depth, further evidence of the bactericidal power of sunlight. The German Deep Sea Expedition has now a practical bacteriologist attached, Dr. Bachmann, from Flügge's Institute, and important results are anticipated from his research, but Fischer urges all who have the opportunity to make a study of ocean bacteriology. Nansen asserts: "life is everywhere, even to the very poles." He found that the temperature of the water rose with the depth.

Total Excision of the Stomach Combined With Resection of the Intestines. T. KOCHER.—A special danger is signalled in this communication, based on an observation described in detail, but pulling on the stomach or intestine is liable to disturb the circulation in the arteria mesaraica and lead to extensive anemic necrosis of the intestinal mucosa in the tributary region, with a fibrinous deposit on the outside of the intestine, and fatal peritonitis from perforation. In two other cases of partial excision there was for quite a while a rebellious diarrhea, with a circumscribed sensitive region, probably due to the same cause, as also the hemorrhages sometimes noted after such operations. Kocher, therefore, advises in difficult and complicated cases extending the incision to obtain ample room. Also to watch that the compresses walling off the abdominal cavity do not exert undue pressure, and in detaching the posterior surface of the stomach, see that there is no pulling in the region of the root of the mesentery and of the vessels leading to the intestines. He observes that the union of the duodenum with the esophagus presents no difficulties, and adds that he has partially resected the stomach in ten cases during the last five months. Two have since died; one from pneumonia, the other from pre-existing cachexia.

Zeitschrift f. Geburtschilfe u. Gynakologie (Stuttgart), xli, 2.

Purpura in Puerperio. J. C. DIEHL.—The autopsy of a VI-para succumbing after an abortion at four months disclosed internal hemorrhages, capillaries much dilated, but no microorganisms, in both mother and fetus, evidently a case of idiopathic purpura. He concludes after much study of the subject that almost all cases of purpura are secondary, and that idiopathic purpura cases are only those in which no existing affection explains the eruption, which may be due to an organic or functional affection of the sympathetic. Pregnancy favors the evolution of morbus maculosus, and renders the prognosis serious. The interruption of the pregnancy is almost invariably the result of the disease, which may involve also the fetus, although this rarely occurs.

Beitrage zur Klinische Chirurgie (Tubingen), xxiv, 2.

Operative Treatment of Aneurysms. H. HOFFMANN.—In two of the seven observations related, Mikulicz first ligated the afferent artery and when this wound had healed, removed the clot through an incision, sutured the wound at once and applied a compressing bandage. Although this method takes a longer time for the healing than extirpation, it is harmless and is indicated in cases in which extirpation is counterindicated. No narcosis is required, as Schleich anesthesia is sufficient.

Disinfection of Infected Wounds. C. v. EICKEN.—Research in this line is described which demonstrated that the main point in treating infected wounds is good absorbing bandages and changing them frequently. Three per cent. solution of carbolic acid produced the most extensive changes in the tissues of all the disinfecting substances applied, whether under a drying or impermeable covering.

Experiences With Surgery of the Pleura and Lungs. H. GROSS.—Four cases of echinococcus of the lungs all recovered after removal of the cyst, surpassing even Tuffier's percentage—90.1 per cent., that is, 55 recoveries in 61 operations. Gross recommends drawing the lung forward and suturing it in case of pneumothorax, tamponing the thoracic cavity to keep the air out. He prefers the scissors to enter the lung and rejects the thermocautery, as it chars and makes the lung tissue unrecognizable. He applies compression to arrest hemorrhage, and seizes the lung before cutting into it, to prevent retraction. He removes the entire covering in peripheral abscesses and leaves a passage two to three fingers wide with a central focus. In one case of multiple suppuration of the lung he found Delorme's method of decortication, that is, shelling the lung out of the pleural envelopes, very useful in the expansion of the lung.

Tardy Suppuration After Shot-Wounds. H. GRAETZER.—Suppuration has been known to occur as late as fifty-nine years after the wound, in an experience of three personal and fifty-two collected cases. Shot-wounds can not be considered sterile, as the ball usually carries fragments of the uniform in with it, and latency of the germs explains the late suppurations. No one with a bullet inside him can be sure that disturbances and accidents may not result from it any day.

Centralblatt f. Chirurgie (Leipsic), September 24.

Operative Treatment of Hypospadia in Glans Penis. WATTEN.—Beck's operation for hypospadia is hailed by the writer as a great progress, but unfortunately it can not be applied to all cases (See JOURNAL, xxxii, 1, p. 31 and 5, p. 256), especially when it is impossible to mobilize the urethra sufficiently to draw it out to the tip of the gland. In such a case Watten cuts a flap of mucous membrane out of the lower part of the gland substance, like an oval lozenge, as wide as possible and 1 to 2 mm. thick. The gland is then slit to the middle lengthwise and opened and the flap inserted to make a new supplementary portion for the urethra. A fine catheter is then introduced in the urethra and the flap and glans brought together over it and sutured. No stitches are necessary in the flap itself, except at the tip.

New Trocar for Exploration of Pathologic Tissue. O. SGAMBATI.—As it is becoming more and more necessary to submit a fragment of pathologic tissue to microscopic examination to complete the diagnosis, improved methods of exploration have to be devised, and the little trocar, the tip of which is shown magnified in the cut, seems to be a distinct advance in

this line. It is inserted with only the point projecting beyond the canula. The latter is then drawn back, which releases the knife-blade, and a quick rotation of the trocar to the right cuts out a tiny cylinder of the tissue to be examined. It drops into the notch, where it is held by the knife until withdrawn from the canula. Fragments 2 to 3 mm. in diameter can thus be obtained, the subject scarcely feeling the prick. A spoon can be substituted for the knife in cheesy substances.

Muenchener Medicinische Wochenschrift, September 19.

Tuberculosis and Defects in Development. A. HEGAR.—The influence of tuberculous infection on the sexual apparatus is evident in the amenorrhea of adult women, which is frequently the first indication of latent tuberculosis; the infantile uterus, etc., when infection occurs near puberty or during childhood, but still more striking are the defects in the development of the fetus. Hegar recently observed a bow-shaped rudimentary uterus with tuberculous degenerated tubes, rudimentary cornua and no vagina, in a young woman born of a phthisic mother. The defective development dated from the end of the second month of pregnancy. The connection between the tuberculous influence of the mother and the defects in development is sustained by numbers of other cases cited, in which sexual abnormalities, hermaphrodism, breasts developed in men, beard and penis-like clitoris in women, can be ascribed with great probability to the tuberculous influence of one or both of the progenitors. As these phenomena are also observed when no bacilli nor specific tuberculous alterations can be discovered, it is evident that the toxins are responsible for them. Heredotuberculosis and heredosyphilis can therefore be paralleled in respect to their influence on the offspring, and Hegar is also inclined to rank alcohol and metal-salts intoxication with them in regard to the dystrophic alterations produced. It seems probable that all these toxins and poisons injure the germ plasma and the embryo in the same way, but possibly later research may establish differences in their action. He is convinced that this theory is fundamentally correct and of the greatest scientific and practical interest and that it points out the road for further important results.

Specific Immunizing Serum Against Epithelium. VON DUNGERN.—The writer established recently that foreign red corpuscles introduced into an animal organism are destroyed

by an anti-body which forms and has a special affinity for the "immunization-bodies" of the erythrocytes used, but has no affinity for the red corpuscles of the animal producing it. (See JOURNAL, xxxii, p. 935.) He now announces that similar research with epithelium scraped from the trachea of cattle the moment they are slaughtered, suspended in salt solution and injected into the abdominal cavity of guinea-pigs, resulted in the survival of the injected epithelium elements for several—in some cases as long as ten—days, evidenced by the ciliary movements, vacuolization, etc. But if the same process is repeated ten days later, the injected epithelium elements rapidly die, evidently destroyed by an anti-body that has formed in the meanwhile, the same as the red corpuscles are destroyed by the anti-body first mentioned. The anti-body that attacks the epithelial cells can in fact be isolated from the serum, although its action *in vitro* is much less pronounced than *in vivo*, resembling cholera immune-serum in this respect. The red-corpuscle immune-serum does not attack the epithelial cells, but the epithelial immune-serum, besides its specific action on the epithelium, has also a non-specific action on the red corpuscles. This non-specific action, however, does not occur when epithelial cells are combined with the red corpuscles, and the fact that this non-specific action of an immune-body on red corpuscles is arrested by combining with the latter the appropriate "immunization-body," can be utilized as a test, and enables us to determine in the simplest way other specific anti-bodies which are present in the blood-serum of the animals in question after preliminary treatment with various tissue elements, whenever direct demonstration by the effect of the serum on the cells is lacking. By combining non-specific tissue with the blood added to the immune-serum, we can compare the chemical affinity of the various tissue elements with the affinity of the red corpuscles to the anti-body in question, and thus establish the relations between the separate tissues in respect to their immunizing bodies. The practical results of this research are the suggestion of applying this epithelium immune-serum to the treatment of carcinoma, especially for local treatment after removal of all naked-eye cancerous tissue. The anti-body produced for this purpose must be derived from human epithelium, and the writer has already commenced immunizing animals with milk which also contains the "immunizing-body" of the epithelium.

Nordiskt Medicinskt Arkiv (Stockholm), August 31.

Pathologic Modifications of the Alimentary Canal in Pernicious Anemia and Atrophy of the Intestines. K. FABER AND C. E. BLOCH.—The Germans have of late described peculiar modifications in the intestines in pernicious anemia, which they assume to be atrophied patches and possibly a factor in the production of the anemia. The research reported in this communication has confirmed the existence of the modification exactly as described by the Germans, but the writer's interpret them quite differently, considering that they are partly cadaveric processes and partly merely the result of distension. In two cases of pernicious anemia the peritoneal cavity was injected with a solution of formol immediately after death, which fixed the intestines as in life, and examination with the microscope showed that every one of the coats of the intestine was normal and well preserved, out that there were portions in which the wall was thinner, smooth and without folds, with the follicles far apart. Experiments on animals effectively demonstrated that this appearance of these portions was the effect of distension. There was no evidence to prove any atrophy of the intestines in these two and other cases examined, but the evidence conclusively established that distension and putrefaction acting in concert, were able to produce the condition described as patches of atrophy of the intestines by others.

Presse Medicale (Paris), September 20.

Treatment of Varicocele. T. TUFFIER.—In this communication Tuffier warns against operating in certain cases of varicocele in neurasthenics, hysterics, epileptics, etc., as although no more dangerous for the patient the operation is dangerous for the surgeon. Cases have been known in which the lost genital functions were restored after an operation, but the reverse has also been known to occur, and these subjects are extremely liable to ascribe to the surgeon what is in reality due to their affection. The three varieties of varicocele: venous ectasia with normal coverings; parietal insufficiency or orchidoptosis, with normal veins, and the mixed form, all require different treatment. The cause should invariably be sought elsewhere, as the varicocele is frequently merely one manifestation of a general affection characterized by a physiologic insufficiency of the tissues. It may possibly be due to compression from a truss, to a hernia compressing the cord, to an iliac, abdominal or renal tumor, constipation, etc. In the first variety, after removing the cause, the enlarged veins are resected and patients cured in a few days, with no suspensory required. In the second form, if suspension and cold ablutions fail, the stretched walls of the scrotum must be resected and a new firm scrotum made out of what is left. The mixed form requires mixed treatment.

Thrombophlebitis of the Cord Treated by Phlebectomy. L. LONGUET.—Another observation is added to the five in literature. The circumscribed thrombophlebitis was twenty centimeters in length unstraightened; patient dismissed cured in ten days.

Pathologic Acetonuria. G. MILAN.—The syndrome of acetonuria is comprised in the chloroformic odor of the breath and of the urine and the nervous symptoms. The dyspeptic form is usually febrile, with somnolency, depression and refusal to eat, or restlessness, excitability, slight delirium. Skin hot, pulse 120. Rectal temperature, 39 C. Tongue moist, yellowish in the center. Vomiting, tendency to constipation. When non-febrile, the symptoms simulate a typhoid fever. The diabetic form is manifested by imminent or declared coma. The treatment of these two chief forms of pathologic acetonuria is entirely different. Diabetic subjects should be supervised with extreme care, as even slight glycosuria is no guarantee against sudden severe accidents from acid intoxication. Lepine gives sixty to eighty grams a day of sodium bicarbonate in threatening acid intoxication, and in cases of coma, injects into the veins two liters of sterilized water containing seven grams of sodium chlorid and ten grams of sodium bicarbonate to the liter. Dyspeptic acetonuria, on the contrary, is threatened merely by removing the cause, the dyspeptic disturbances, refraining from milk, eggs, fish, meat, and taking a light carbohydrate diet. The albuminoids increase acetonuria and also fasting, on account of the autophagia induced. The only medication is purgative. Vergely recommends in addition, to prevent fermentations, a mixture of sodium hyposulphite, 20 to 40 centigrams; syrup of orange flowers, 10 grams, and glycerinated water, 10 grams. Recurrences are frequent and must be prevented by exercise, dieting and frequent evacuations of the intestines.

Gazzetta degli Ospedale (Milan), September 10 and 17.

Sympathectomy of the Utero-Ovarian Plexus. G. CAVAZZANI.—Last spring Ruggi recommended resection of the plexus spermaticus or utero-ovarialis to relieve pain or as a supplementary measure in laparotomies, even claiming, as mentioned in the JOURNAL of August 19, p. 478, that in many cases of hyperesthesia and erethism this intervention might alone answer the entire purpose. Cavazzani now reports two cases thus treated: one had had one ovary removed and later a hystero-salpingo-oöphorectomy on the other side had been done, but intense pains still persisted in the right iliac fossa, radiating to the foot on that side and to the thorax and shoulder on the other. The tube was found degenerated and there was a serofibrinous exudate in the small pelvis. The ovarian plexus was resected and all pains disappeared as if by magic—not a twinge since the very evening of the operation. The effect of suggestion was excluded, as the patient had not been informed that any unusual operation was to be performed, and was very deaf. In the other case the pains persisted after vaginal hysterectomy, radiating from the iliac fossa to the hip and thorax, and preventing all work. An atrophied tube and ovary on the opposite side were removed and the ovarian plexus resected. The pains disappeared completely. Both patients were operated on in June.

Experimental Research to Determine the Presence of the Diphtheria Bacillus in the Blood. C. CAFIERO.—Rabbits and guinea pigs were inoculated subcutaneously with the bacillus or with the diphtheria bacillus and streptococcus combined, under the most varied conditions and examined immediately after death, but the diphtheria bacillus could never

be detected in the blood, even when derived directly from the heart.

Cystic Biliary Colic. DE RENZI.—When the colic is due to the arrest of the calculus in the cystic duct, the pain is located toward the umbilicus, but when caused by the obstacles encountered by the calculus in its passage through the hepatic and common bile-duct, the pain usually occurs in the right hypochondrium, and there are frequently nervous irradiations and complications—pain in the right shoulder, vomiting, etc.—symptoms never observed in cystic colic. Calculi are never found in the feces after cystic colic, as the calculus returns to the gall-bladder, while they are usually found when the calculus is derived from the hepatic and common bile-duct. This classification of colic into these two well-defined varieties, cystic and hepato-choledochal, is based on a careful study of symptoms and anatomic changes in the ducts.

Research in Respect to the Glycogenic Function of the Liver in Relation to the Oxygenation of the Blood. E. LEONARDI.—Numerous series of experiments on frogs, removing one or both lungs or one at a time, and studying the effect on the glycogenic function, are described in this communication. The result was the same in each, that with the lungs removed not a trace of a glycogen could be discovered, proving the suspension of the function with the deprivation of oxygen. In one series of tests the frogs were placed in ice water, and the glycogenic function remained normal even in the animals without lungs, showing that with the diminished metabolism in the extremely cold water, the absorption of oxygen by the skin was sufficient to supply the diminished demand.

Specific Gravity of the Brain of the Insane. C. AGOSTINI.—Study of numbers of autopsies and examination of animals sustain the hypothesis that the specific gravity of the brain and comparison of different portions of the brain in this respect, is an important criterion among others, for the determination of the degree of evolution of the brain, and of pathologic conditions, as evidenced by the greater or less difference between the specific gravity of the gray and white matter or between various portions of the cortex. There seems to be a tendency toward alteration of the normal proportions in this respect in the insane, with a special type for each form of insanity, which are described at length in the original article in *Riv. Sperim. di Freniatria*, xxv, 2.

Societies.

COMING MEETINGS.

Medical Association of Central New York, Syracuse, October 17.
Northwestern Medical Society and Fox River Valley Association, joint meeting, Oshkosh, Wis., October 17.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Chattanooga, October 24-26.
New York State Medical Association, New York City, October 24-26.
Medical Society of Virginia, Richmond, October 24-26.
American Public Health Association, Minneapolis, Minn., October 31.

Hartford County Medical Society.—This society will hold its semi-annual meeting in Hartford, Conn., October 18.

Detroit Medical and Library Association.—At its annual meeting, October 3, the Association elected the following officers: President, C. Bonning; vice-president, F. L. Newman; secretary, P. C. McEwen; treasurer, R. W. Gilman.

Northern Berkshire Medical Association.—The annual meeting of this Association was held in Adams, Mass., September 26. The following officers were elected for the ensuing year: President, J. H. A. Matte; vice-president, William Galvin; secretary and treasurer, E. E. Russell.

Wayne County Medical Society.—The annual meeting was held October 5, in Detroit. The retiring president, Dr. R. H. Honner, in his annual address, congratulated the organization on its record of the past year and its success in promoting medical legislation in the last legislature. Dr. Honner said the society is endeavoring to bring about either national legislation on certain medical matters, or a proper reciprocity among the states. The report of the secretary, Dr. W. J. Cree, showed the membership to be 249, of which 226 are active members. The election of officers resulted as follows: President, G. A. Kirker; vice-president, F. D. Summers; secretary, W. J. Cree; treasurer, C. H. Leonard. At the close of the executive meeting the members were given a banquet by the retiring president.

American Public Health Association.—The twenty-seventh annual meeting of this Association will be held at Minneapolis, Minn., October 31-November 3. The executive committee has selected the following topics for consideration, on which special committees have been appointed to report:

1. Pollution of Water Supplies.
2. Disposal of Garbage and Refuse.
3. Animal Diseases and Animal Food.
4. Car Sanitation.
5. Steamship and Steamboat Sanitation.
6. Etiology of Yellow Fever.
7. The Relation of Forestry to the Public Health.
8. Demography and Statistics in Their Sanitary Relations.
9. Cause and Prevention of Infectious Diseases.
10. Public Health Legislation.
11. Cause and Prevention of Infant Mortality.
12. Period During Which Each Contagious Disease is Transmissible and the Length of Time for Which Each Patient is Dangerous to the Community.
13. Sanitation, with Special Reference to Drainage, Plumbing and Ventilation of Public and Private Buildings.
14. Method of International Arrangement for Protection Against the Transmission of Infectious Diseases.
15. Disinfectants.
16. To Examine Into the Existing Sanitary Municipal Organizations of the Countries Belonging to the Association, with a View to Report Upon Those Most Successful in Practical Results.
17. Laboratories.
18. To Define What Constitutes an Epidemic.
19. National Leper Home.
20. Revision of Classification of Diseases.
21. Dangers to the Public Health from Illuminating Gas Leakage.

Papers will be received on other sanitary subjects. A daily program will be issued each morning, giving the titles of papers, reports, etc., that will be presented, with such other information as may be of interest in connection with the work of the day. The railroads have granted excursion rates on the certificate plan. The citizens and medical profession of Minneapolis have arranged many social features for the entertainment of the city's guests and an interesting meeting is expected. The following are the officers: President, Henry Mitchell, Asbury Park, N. J.; vice-president, Jésus E. Monjarás, San Luis Potosi, Mex.; secretary, C. O. Probst, Columbus, Ohio; treasurer, Henry D. Holton, Brattleboro, Vt.

Further information concerning local matters, if desired, may be obtained by addressing H. M. Bracken, honorary secretary, Minneapolis.

Mississippi Valley Medical Association.

Abstract of Proceedings of the Twenty-fifth Annual Meeting, Held at Chicago, Oct. 3-6, 1899.

SURGICAL SECTION.

VESICO-RECTAL ANASTOMOSIS.

DR. JACOB FRANK contributed a paper on this subject, which, by the addition of subsequent experiments, was an elaboration of a paper published in the JOURNAL, July 15, 1899. As a result of those experiments—made on dogs—he arrives at the following deductions:

1. The recovery of the animal and the macroscopic appearance of the tissues do not necessarily signify absence of infection.

2. In the dogs killed thus far, the operation of vesico-rectal anastomosis can be performed without a resulting kidney infection.

DR. H. O. WALKER, Detroit, Mich., commended the paper for its originality. His experience with ureteral implantation has been limited, but having read the literature on the subject, he is impressed with the practicability of the operation described by the essayist, believing it will do away with implantation of the ureter into the rectum.

DR. THOMAS CHARLES MARTIN, Cleveland, Ohio, said the essayist is less enthusiastic than he is justified in being, for it seems to him that in a human subject who has exstrophy of the bladder this new operation could be performed without opening the peritoneal cavity.

HEMORRHOIDAL COMPLICATIONS.

DR. JOHN L. JELKS, Memphis, Tenn., read a paper in which he dealt with some complications met with before and after operations for hemorrhoids, their causes, prevention and treatment. He reported several instructive cases. He said a surgeon sometimes, in dealing with a simple rectal trouble, encounters serious disease of the uterus and its adnexæ. This is particularly true when the patient is hysterical. Without the entire relief of both or all conditions, the patient will probably feel that little benefit has been given her.

Syphilis and gonorrhea may be and often are causes of rectal troubles. When a patient with hemorrhoids has gonorrheal infection, the latter becomes a serious complication, and the treatment of one or both conditions is varied by the circumstances of the case. As to tumors and pregnancy, while the latter amounts to a complication, and often causes hemorrhoids, he thinks that, as a rule, only palliative treatment should be instituted. Stricture of the urethra, like cystitis, is a grave complication of hemorrhoids, or may be the cause of their development.

DR. JOSEPH M. MATHEWS, Louisville, Ky., believes that no intelligent surgeon to-day uses carbolic acid for the treatment of internal hemorrhoids. In operating, the clamp and cautery may be used, or the ligature. The former method of operating is not so liable to be followed by the complications referred to by the essayist. He would operate on hemorrhoids, regardless of complications, such as pregnancy, a displaced uterus, etc.

DR. J. R. PENNINGTON, Chicago, stated that hemorrhage after an operation for hemorrhoids was slight, provided the operation was thoroughly done. He disagrees with the essayist that the use of the tampon in rectal operations is a source of infection.

DR. C. LESTER HALL, Kansas City, Mo., has never been able to devise a tampon for rectal use which did not prove a source of irritation and great pain to the patient.

DR. VINCENT J. HAWKINS, St. Paul, Minn., said the ligature method caused considerable pain in many cases, even when properly applied, and he has had to give patients hypodermics of morphia to relieve suffering.

DR. S. B. TAYLOR, Columbus, Ohio, agreed with Dr. Mathews that hemorrhoids should be removed when complicating pregnancy.

DR. H. O. WALKER, Detroit, Mich., believes that the day of the ligature has passed. He sees no reason why a surgeon should not operate for hemorrhoids the same as he does for any other condition.

DR. THOMAS CHARLES MARTIN, Cleveland, Ohio, concurred in the remarks of Dr. Walker that the ligature, as a method of operating, should be abolished. Hemorrhoids can be removed with clamp and cautery, without general anesthesia, if the operation is properly executed.

DR. JELKS, in closing, spoke of the value of the rectal tubular speculum devised by Dr. Pennington. He does not believe that a severe hemorrhage, however, can be controlled by a tampon during a rectal operation. Dilatation of the sphincter at the time of the operation is necessary. Where he fails to divulse the sphincter or to dilate thoroughly the rectum, the patient always suffers more or less pain.

THE MASTOID OPERATION.

DR. GEORGE F. KEIPER, Lafayette, Ind., read a paper on this subject, and reported several cases. He directed attention to the possible injury of the facial nerve in operative work either on the mastoid or the middle ear. He believes that surgeons have been reckless in this regard and patients have suffered in consequence. If the facial nerve be wounded or cut off, all authorities are agreed that it can not be regenerated in from less time than from twelve months to two years, if regenerated at all. Hence the importance of taking due notice of its presence in operative work. Wounding of the facial nerve is liable to take place, notwithstanding every precaution that may be taken. A case operated on by the essayist showed partial facial paralysis, because, he believes, the facial nerve was misplaced.

DR. WILLIAM L. BALLENGER, Chicago, condemned the use of the trephine for beginning a mastoid operation. He considers the chisel a better instrument, or the dental engine with a burr, or the Russian perforator.

MODERN SURGICAL TREATMENT OF HEMORRHOIDS.

DR. GUSTAVUS M. BLECH, Chicago, contributed this paper. Since a hemorrhoidal tumor is but the result of an inflammatory process, the author believes that germ infection must be the main etiologic factor. A *locus minoris resistentiae* is produced by certain mechanical influences, which, however, in the light of modern pathology can be considered only as predisposing causes. In this class belong: straining during defecation, obstruction of the portal vessels from liver disease and abdominal tumors, pressure produced by the gravid uterus, pressure on the veins from impacted feces, etc. That germs are primary factors in the production of hemorrhoids the author is satisfied from observations in his practice.

Coming to the treatment, he said that in the earlier years of his professional career he was in the habit of removing internal and external hemorrhoids with the écraseur. His objections at present to this method are: 1. The wire of the instrument is very apt to break, leaving the operator in a dilemma, especially when the operation is half done. 2. The cut surface is not accurate, nor can it be regulated. No matter how close the wires are kept down to the base, the écraseur cuts as it pleases, and not as the surgeon desires it. 3. It frequently happens that after operation is completed, complete separation of the tissues does not take place, and if the screw is tightened, some tissue is drawn into the stem, and if continued, the stem is apt to bore itself into the rectal wall.

The author does not favor the Whitehead operation. His method of operating for internal hemorrhoids differs but little from the one in vogue by most surgeons. If he has to remove but one tumor of large size, he simply throws around its base a temporary ligature, cuts off the entire tumor, and then sews the wound in the direction of the axis of the rectum with interrupted sutures.

DR. F. F. RYAN, Georgetown, Ky., operates with clamp and cautery, and with the ligature, but considers the former a more popular method, and he advises its use in every instance where there is no contraindication. He has not met with a case in which there were contraindications to its use.

DR. JELKS, Memphis, said there was no more pain after the use of the clamp and cautery than after the ligature. He seldom encounters hemorrhage after the application of the ligature.

DR. G. M. BLECH, in closing, agreed with Dr. Jelks as to the painlessness of the ligature method in treating hemorrhoids. He has known patients to complain bitterly after treatment with the thermocautery, so that it was necessary to give rectal suppositories of morphin, etc., to afford relief.

BETA-EUCAIN AS AN ANESTHETIC IN EYE, NOSE AND THROAT WORK.

DR WILLIAM H. POOLE, Detroit, Mich., read this paper, in which, after reporting a series of cases in which this agent was used, he drew the following conclusions:

1. Eucain is decidedly less toxic than cocain, therefore superior to it.

2. Its aqueous solutions keep well and can be sterilized by boiling without destroying the activity of the drug.

3. It produces anesthesia equally well and sometimes better than cocain.

4. It is superior to cocain, in that it causes no heart depression or other unpleasant systemic effect.

5. It causes no mydriasis, and no disturbance of accommodation, which is an advantage in some cases.

6. It is less dangerous to the cornea than cocain, inasmuch as it does not cause a desquamation of the superficial epithelium.

INTOLERANT ULCERATION OF THE RECTUM.

DR. STERLING B. TAYLOR, Columbus, Ohio, presented this paper, in which he reviewed at considerable length the surgical anatomy of the anal portion of the rectum.

In the early stages of intolerant ulceration, physicians are inclined to discredit the presence of any severe pain, inasmuch as in its incipiency it is merely a rent or tear in the mucous membrane. This is prevented from healing by the lodgment of small particles of fecal matter, which produce irritation and

inflammation and eventually painful ulceration. The extreme pain makes its appearance with the unhealthy granulations. Pain is not the only disagreeable accompaniment, as there is often annoying and sometimes dangerous hemorrhage, especially if the ulcer be located high. The usual seat of the ulcer is at the posterior commissure, and it is here that it is most painful. The anterior commissure is the next favorite seat of the ulcer.

In the treatment, the essayist recommends the method practiced by Martin, which he considers simple and effective. No general anesthesia is required, but simply infiltration anesthesia, which is practiced by the injection of a few drops of a 0.1 per cent. solution of eucain or cocain around the ulcer. A slight incision is then made through the membrane and integument down to, but not through, the sphincter. The operator then packs with a small piece of iodoform gauze. Bowels should be kept open with some laxative, preferably a mineral water. Apenta water is both pleasant and efficacious. Several cases were reported in which the Martin method of treatment was resorted to. Dr. Taylor holds that rectal ulcers can be excised under eucain anesthesia without pain.

OBSTRUCTIVE GROWTHS OF THE PYLORUS.

DR. J. E. ALLABEN, Rockford, Ill., read this paper, in which he reported a successful case of pylorectomy. He drew the following conclusions:

1. Cancer is one of the most potent factors in the causation of death, with a tendency to constantly increase in frequency of occurrence.

2. Gastric cancer occurs in about one-fifth of all primary cases.

3. In gastric cancer the pyloric region is affected in 60 per cent. of the cases.

4. The treatment of gastric cancer directed toward a permanent cure is, in the present state of our knowledge, limited wholly to surgical methods.

5. As early total extirpation of malignant growths with the hope of permanent cure is the goal toward which we are constantly striving, and as these growths in gastric cancer occur at the pyloric region in 60 per cent. of the cases, it would seem to follow as a natural conclusion that pylorectomy would be the treatment most frequently proscribed for the cure of this malady.

6. Inasmuch as early diagnosis is the greatest requisite for directing proper radical treatment, the internalist and the surgeon should turn their best efforts in this direction.

7. If the operation of pylorectomy were performed before obstructive symptoms manifest themselves, and before the occurrence of metastasis, the immediate results would be as favorable as in any other abdominal work, and the remote results as good as in extirpation of carcinoma of the breast.

VALUE OF PROSTATIC EXAMINATION.

DR. J. L. BOOGHER, St. Louis, Mo., read a paper in which he dwelt upon the value of prostatic examination in the treatment of associated affections.

WHAT BECOMES OF THE MEDICINALLY TREATED CASES OF APPENDICITIS.

DR. LEWIS SCHOOLER, Des Moines, Iowa, contributed this paper. He predicts that the facts as disclosed by greater observation and the increasing experience of medical practitioners will inevitably show that the present position occupied by them is untenable. Patients who are treated by means of medicine only either die under such treatment or are later cured by operation. To the above there should be noted a single exception, namely, those cases which are spontaneously cured. This occurs by rupture into the bowel, vagina, bladder, or externally. Instances of this method of cure are familiar to all. It is therefore singular that, in view of such familiar occurrences, medical gentlemen do not take the hint that nature is so persistently urging on them and comprehend more clearly the fact that removal of the offending cause, organ and product, is the only rational procedure. It is the only one that is approved by nature, pathology, observation and science.

SURGICAL FEATURES OF APPENDICITIS.

DR. HAL. C. WYMAN, Detroit, Mich., followed with a paper in which he dwelt upon the surgical features of appendicitis.

DR. J. A. ALLABEN, Rockford, Ill., cited a case which showed the folly of delay in surgical intervention.

DR. F. F. BRYAN, Georgetown, Ky., narrated four cases which emphasized the points brought out by the essayist.

DR. J. O. MALSBURY, Peru, Ind., referred to the importance of more careful diagnoses on the part of internalists, so that cases suitable for the surgeon should be referred to him without delay for operation. He classified cases of appendicitis as inflammatory and mechanical.

DR. HAROLD N. MOYER, Chicago, said he formerly regarded this disease as a surgical one, and that when a case was diagnosticated as such, it should at once go to the surgeon. He does not take that view now. He believes many cases belong to the internalist. Indiscriminate operations for appendicitis are followed by a greater mortality than from those treated medically.

DR. J. N. BARTHOLOMEW, Chicago, looks on appendicitis as a surgical affection from beginning to end, and as the result of germ infection. He favors early operative intervention.

DR. C. K. BRUNNER, Greenfield, Ind., is firmly convinced that he sees many cases of appendicitis that never become surgical, and these, when properly treated medically, recover.

DR. J. HUMPHERY, Henderson, Ky., said the surgeon and physician should work hand in hand in cases of this disease. They should discriminate between medical and surgical cases.

DR. T. A. LANCASTER, North Manchester, Ind., quoted the opinions of Keen, Morris and others in regard to this disease, and said they were undergoing material changes, in that they were not operating as much as they had been heretofore.

DR. V. J. HAWKINS, St. Paul., Minn., thinks many cases of the disease can be treated medically, while others require operation.

The discussion was further participated in by Drs. Charles B. Brown, Sycamore, Ill.; R. E. Haughton, Richmond, Ind.; J. Henry Carstens, Detroit, Mich.; S. K. Crawford, Chicago; James B. Bullitt, Louisville, Ky.; A. H. Cordier, Kansas City, Mo.; Frederick C. Schaefer, Chicago; Emory Lanphear, St. Louis, Mo., and closed by the essayist.

INTESTINAL OBSTRUCTION FROM BILIARY CALCULI.

DR. J. WESLEY BOVEE, Washington, D. C., read this paper. He stated that intestinal obstruction from biliary calculi is very uncommon. Brinton found in 500 cases of intestinal obstruction but 24 cases due to gall-stones, and Leichtenstern found but 41 in 1544 cases of bowel occlusion. In the Manchester Royal Infirmary but one case in 50,000 patients treated for all troubles was found. As it is a condition practically limited to late life, its rarity is to be expected. The author then dwelt on the varieties of obstruction, the location, causes, symptoms, and prognosis.

In considering the treatment, he stated that various remedies have been employed. Hippocrates, and later others, recommended injection of air into the bowel. Tobacco smoke and infusion and different gases have been thus employed. Purgatives are positively harmful. Morphia and belladonna are the two best drugs in this condition. Of course, electricity has not been omitted. With medical treatment, nearly half recover, but is that a sufficiently large proportion? In 1672 Barbette recommended laparotomy for acute intestinal obstruction, and as abdominal surgery is now practiced its use in acute obstruction of the bowel from biliary calculi should give brilliant results. Medical treatment may be used for a short time, and, failing, should be superseded by laparotomy, with a careful exploration of the abdominal and pelvic contents. The seat of obstruction being found, the condition of the patient and the degree of mobility of the stone in the bowel will guide the operator in the subsequent steps. The plan of Tait, passing a strong needle obliquely through the bowel wall into the stone to break it up, may first be tried, the puncture wound being closed by a Lembert stitch. This failing, the stone should, if possible, be pushed higher in the bowel and a longitudinal enterotomy done, with extraction of the stone.

Gangrenous bowel, perforation, or localized peritonitis, with or without pus, should be treated *secundum artem*. It is always well to look for a second obstruction, as this has caused death in some cases. The deaths following laparotomy for this condition are nearly always from shock or sepsis, a strong argument for early operation. It would not seem improbable that early laparotomy in these cases should have a mortality of less than 10 per cent.

ADDRESS IN SURGERY.

DR. LEWIS S. MCMURTRY, Louisville, Ky., delivered this address. He chose for his subject "The Essential Requirements of a Modern Operative Procedure." He said that within the past fifteen years the province of surgery and its scope have been greatly enlarged. Many diseases and injuries that were formerly treated on the expectant plan and by palliative measures, with little hope of permanent relief or cure, are now cured by judicious surgical intervention. Notwithstanding the increase in hospital facilities in cities and towns, many important surgical cases must receive immediate attention at the hands of the family physician from the very nature and urgency of the disease or accident. Such cases are classified as emergencies, and they include many major as well as minor injuries. When a surgical operation is to be done, either major or minor, certain fundamental principles of asepsis should be observed, and yet it is comparatively exceptional in private homes for minor surgical procedures to be carried out without the presence of pus following operative intervention. There are three important conditions to be observed, or three important steps. The first is the administration of the anesthetic. This requires skill, which can only be acquired by practice, hence medical students should receive practical instruction in the administration of anesthetics, a thing that is only done in a few of the institutions of this country. The second element of a surgical procedure consisted in the control of hemorrhage. In the early days of abdominal surgery it was common to disregard the question of hemorrhage. All those present would remember the days when the drainage-tube was more frequetly used than it is now, and that within forty-eight hours after an operation it was customary to pump out considerable quantities of blood as the result of oozing from small vessels that were ignored in the operation. Nowadays, when more attention is given to hemostasis, hemorrhage is lessened on account of attention being given to the small vessels. A third indication, and the one to which he devoted the remainder of his remarks, was the important matter of asepsis.

NASAL STENOSIS.

DR. JOHN J. KYLE, Indianapolis, Ind., read a paper in which he discussed the treatment of nasal stenosis due to deflection of the nasal septum, with or without thickening of the convex side. In his opinion the most frequent cause of deflection is trauma. Ulceration of the septum or inflammation within the septum, as noted in a child suffering with congenital syphilis, and hypertrophy of the turbinates, are causative factors. A strumous or uric-acid diathesis may predispose to perichondritis and subsequent deflection. The author showed different forms of deflection by passing around diagrams.

Speaking of the surgical treatment, he mentioned the operation of Asch as being the most popular, and believes it will bring about a positive result.

REMOVAL OF CERVICAL SYMPHATETIC.

DR. EMORY LANPHEAR, St. Louis, Mo., contributed a paper in which he dealt with the removal of the cervical sympathetic for epilepsy, exophthalmic goiter, and glaucoma He mentioned the work of Jonnesco and other surgeons along this line, saying that this field of surgery was worthy of further study and investigation.

DR. HAROLD N. MOYER, Chicago, said that the benefit to be derived from operation in exophthalmic goiter is not very promising. However, the subject was worthy of further experimentation. He believed the same thing applies to epilepsy. Some benefit might be accomplished by operating on these cases at an early date. If the operation is late, very little, if any, benefit will be derived from it.

SURGERY OF THE TURBINATED BONES.

DR. J. A. STUCKY, Lexington, Ky., read a paper on this subject. The author did not discuss operative procedures on the turbinated bodies, nor on any of the soft tissue covering the bone, but rather the bone itself. While it is true that the tissues covering the bone are far more frequently found in a pathologic condition, and require surgical treatment, it is also true that the bone itself in many instances is at fault. When this is the case, the mucous membrane and turbinated bodies may be entirely obliterated by chemical and electric cautery, or scissors, forceps and snare, and the latter condition of the patient be worse than the former, because of the remaining cicatricial tissue and unnatural dryness of the parts.

The author then called attention to what seems to him to be the best method of removing a part or whole of the bone. The first and most important desideratum in all intranasal operations is to remove only just as much tissue as is absolutely necessary. The crushing or punch forceps, spoke-shave, and snare should only be used in exceptional cases. In removing a part or the whole of the middle turbinate, correctly shaped scissors are the only instrument needed. For this purpose he has found none equal to those devised by Dr. C. R. Holmes of Cincinnati, one for each turbinate, right and left. For turbinectomy or turbinotomy of the lower bone, the narrow-bladed scalpel, saw and strong straight scissors are needed. An incision through the soft tissues is made along the edge of the bone; this is peeled back with the back of the scalpel and the bone exposed. Should this be too firm to cut with the scissors, a narrow, thin saw is used.

In cases where the knife, saw and scissors can not be used to complete the operation on account of the size, depth and conformation of the nasal chambers, the snare is used to complete the removal of the posterior portion. Little or no dressing is needed after the operation, except when the lower turbinate has been entirely removed; then strips of gauze placed smoothly over wounds are allowed to remain twenty-four or thirty-six hours, then carefully removed, after thoroughly softening with 50 per cent. hydrogen dioxid. The subsequent treatment consists of keeping the parts clean until union is complete.

DR. WILLIAM L. BALLENGER, Chicago, concurred with the essayist as to the method of operating. He has seen the type of osteitis mentioned follow the use of the snare, and the wound persist in discharging pus. An instrument that has a greater cutting surface than the snare for operating on the turbinates is certainly desirable.

DR. O. J. STEIN, Chicago, said the average rhinologist has a tendency to ignore the bone in operating on the turbinals, that is, he uses the snare or some other instrument to remove the soft tissues, but ignores the bone, which is of more importance.

(To be continued.)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Abstract of Proceedings of Twelfth Annual Meeting, Held at Indianapolis, Ind., Sept. 19, 20 and 21, 1899.

(Continued from Page 915.)

LAWSON TAIT.

DR. CHARLES A. L. REED, Cincinnati, Ohio, delivered a memorial address on Lawson Tait, which is published in full in the JOURNAL of October 7.

THE RIGHTS OF THE UNBORN; THE PREVENTION OF CONCEPTION.

DR. E. J. ILL, Newark, N. J., selected this for the subject of his presidential address. He said that an abuse, fostered by the security that aseptic surgery gives us, has gradually crept into the work of many all over the civilized world.

The rights of the unborn are often not respected as they should be, and as a strict regard for truth, conscientiousness and careful professional thought on our part would indicate. The right of the unborn would be more respected if it could secure for itself competent legal authority to represent it before a court of law.

He holds that the induction of abortion is performed too frequently; that the law and custom of consultation leaves a wide field for opinion, judgment and professional courtesy. Too frequently the practitioners sympathy runs away with his reason. The frequent deaths of the unborn, as caused by the regular profession legitimately, must ever remain a sign of weakness and impotence of an otherwise noble and humane profession.

The indication for such an operation must greatly change with the advances of therapeutics. Before long we shall be told that the life of the fetus must not be taxed less than that of the mother. When that becomes an axiom our resources will increase to an astonishing extent. Changes in that direction have been very apparent during the past few years.

Cesarean section is now commonly performed, with the greatest likelihood of saving mother and child, and with much less risk to the mother than was formerly incurred by induced abortion. He discusses pregnancy complicated with myomata, carcinoma of the cervix, hyperemesis, etc.

No alternative has yet been found for the non-replaceable complete prolapse of the pregnant uterus, and retroflexed incarcerated uterus, when even a celiotomy will not help us. When we find ourselves confronted with cases that need artificial termination of a pregnancy, let the indication be drawn so close that the most sensitive conscience will not find fault. Though we have no right to chastise our patients for their morality, it behooves us to tell them where physical misery depends on normal decrepitude and to decline our assistance in their illness unless proper regard be given to our admonitions. This is especially the case where we are asked to treat women sick as a result of the prevention of conception. The symptoms produced are mainly local and nervous, the former preceding the latter.

Among the local symptoms we find increased mucous discharges, frequent micturition, bearing down pubic pain, pain in both iliacs and the small of the back. Standing and walking becomes painful; thus, owing to lack of exercise, there results a condition of slowness in the action of the bowel, a disturbed digestive and heart action. With failure of the general health the nervous system fails. These patients tell us of several attacks of nervous prostration.

A physical exploration shows increased vaginal discharges; the vagina appears red and sensitive; its mucous lining thickened. The cervix and corpus are enlarged. The cervix looks blue with turgescence of its veins, and an abundant quantity of blood is poured from them as soon as punctured. The quantity of glairy mucous which pours from the cervix is greatly increased over the normal. Frequently the uterus is retroflexed, rarely retroverted, and the uterosacral ligaments so sensitive that they can barely be touched. With these symptoms we nearly always find enlarged, prolapsed and sensitive ovaries. Among the early symptoms will be an increased menstrual flow and with it often an easing up of the congestive symptoms. Later this becomes less than normal and makes the prognosis an exceedingly bad one. One can safely say that, when this stage is reached, the patient has become an invalid and permanently sterile. In these aggravated cases menstrual pain begins several days before the flow, and is marked by radiations from the iliac fossæ down the anterior and inner aspect of the thighs. Now we find them complaining of a peculiar pain midway between two periods. In these bad cases intercourse has become painful and often disgusting. It has been the writer's experience to see a number of cases of myomata in women, of 30 years or less, who confessed to having followed such practices. Nervous symptoms manifest themselves variously from occipital and vertex headaches and minor hysteric manifestations, to the graver forms of hysteria and semimelancholia.

SECOND DAY—AFTERNOON SESSION.

RETROPERITONEAL TUMORS, WITH REPORT OF A CASE AND PRESENTATION OF SPECIMEN.

DR. RUFUS B. HALL, Cincinnati, Ohio, read a paper on this subject. He stated that retroperitoneal tumors that are operable are rare. His experience in dealing with them, so far as removal of the tumor is concerned, has been limited. All retroperitoneal tumors are difficult to remove, and the operation is attended with a high mortality. They are often malignant. The specimen presented to-day is probably a fibroid tumor of the uterus. When the tumor was removed, eighteen months ago, it was soft and so unlike a fibroid tumor in appearance and consistency that he doubted this very much. The attachment of the uterus was so indistinct that one would doubt that it had its origin from that organ. The tumor was wholly postperitoneal, occupying the patient's right side, and almost wholly filled the pelvic cavity, and projected well into the abdomen. The following is a report of the case:

Mrs. B., aged 38, consulted him on Feb. 14, 1898. She was well nourished and always enjoyed good health until eight months before her visit to him, when she first noticed a small tumor in the right iliac region, not larger than a small orange. The patient gave a clear and precise clinical history up to the time of her visit, which was corroborated by her family physician. She had been married seventeen years, and was the mother of two children, the younger 13 years old. She had never had a miscarriage, or been treated for any pelvic or uterine disease previous to the present illness. She did not suffer much inconvenience other than "a heavy, dragging feeling" in the pelvis and abdomen.

On physical examination a tumor was found that had the appearance of a semisolid mass, nearly as large as an adult head, occupying the right side of the abdomen and extending well down into the pelvic cavity. The uterus, which was not enlarged, was retroverted, and the cervix presented at the vulva. The patient complained of frequent micturition, which was without pain. From physical examination one was inclined to believe that the tumor was solid, probably a fibroid tumor of the uterus fixed by adhesions, yet the clinical history of the rapid growth did not coincide with this conclusion. The possibility of an intraligamentous ovarian tumor was discussed, but could not be certainly determined. The patient was apprised of the fact that the operation for the removal of the tumor would probably mean a hysterectomy. If, on opening the abdomen, the tumor proved to be an intraligamentous cyst, a hysterectomy might be avoided.

She entered his private hospital on March 7, 1898. The operation was made March 10, and the tumor removed. On opening the abdomen he found the large tumor entirely postperitoneal. Near the center of the tumor was the head of the colon, and the mesentery, pulled up over the side of the tumor, corresponded with the middle line of the patient's body. The veins and arteries over this surface were greatly enlarged, and to make an attempt to remove it looked like a hazardous surgical procedure, yet to leave it promised nothing. By taking hold of the tumor mass with the two hands it was slightly movable, suggesting that it might be detached without great difficulty. The dilated ureter could be seen over the top of the tumor to the right of its median line, and the peritoneum could be picked up between the fingers over the top of it. He regarded the tumor at that time as a fibroid of the uterus, developing from the uterine body near the junction of the cervix with the body, and at once decided to make a hysterectomy with removal of the tumor.

The operation was made in the following manner: He first ligated the ovarian artery on the patient's right, and divided the vessel between two ligatures. He then ligated the ovarian artery on the opposite side, divided it between two ligatures, cut through the broad ligament on that side and divided the peritoneum above the top of the bladder over to the tumor and pushed the bladder down. He then ligated the uterine artery on the patient's left side, cut across the cervix and clamped the uterine artery on the patient's right. He then divided the peritoneum behind the tumor up to a point on the tumor connecting with the incision made in front of the uterus. He then enucleated the tumor from below upward, without much difficulty and with little loss of blood. There was general oozing from the large raw surface, and this induced him to make total extirpation of the cervix and drain through the vagina. His greatest anxiety during the operation was to avoid injuring the ureter. There was no injury to this important structure. The patient made an uninterrupted recovery, leaving the hospital inside of five weeks, and remains in good health at this time.

There is a difference of opinion among experts as to the nature of this growth. Some say that it is a spindle-celled sarcoma, and others that it is not malignant at all. At the time of its removal Dr. Hall felt reasonably certain that it was malignant. The clinical history favors this opinion, yet the appearance of the tumor now is that of a fibroid of the uterus. He thinks it is yet too early to say definitely, from the clinical history of the patient, whether or not it is malignant. He knows of one patient who was operated on by a professional friend for a sarcoma of the left ovary. She made a perfect recovery, lived ten years, and he made a second operation a year or more ago and removed the opposite ovary for a perfectly smooth, round, pearly white, hard tumor that proved to be sarcoma. The patient recovered and is now enjoying good health.

The record of this case shows that it is not always necessary to abandon an operation when the tumor is found to be retroperitoneal. In some cases these tumors can be removed without great difficulty, and the patient will make a complete and permanent recovery. It may not always be possible to determine which case can be safely operated on until after the abdomen is opened. If the tumor is somewhat movable and the peritoneum not firmly agglutinated to the tumor mass, these tumors can be removed. Sufficient time has not elapsed since other cases were subsequently operated on to justify the essayist reporting them as permanent recoveries.

DR. CHARLES A. L. REED said that the technic of the essayist in this case was very similar to that with which his name (Dr. Hall) had become identified during the last two years. This, while somewhat a modification of the principle of hysterectomy adopted by Kelly and others, is still original with the reporter of this case as applied to intraligamentary and retroperitoneal tumors in this situation. The question stands out as to the expediency of doing hysterectomy in a case of intraligamentary tumor on one side. He has had occasion to deal with a few intraligamentary growths, and these were not essentially different from the cysts, so far as the anatomic conditions to be dealt with are concerned. It makes but little difference whether the tumor is solid in this situation, or cystic, so far as the difficulty of its removal is concerned. But its removal by the old technic, viz.: that of direct enucleation by splitting the peritoneum and peeling it out, is a procedure that is fraught with so much danger, primarily and secondarily, that it has occurred to the speaker that this modification is certainly justifiable, although it carries with it the ablation of the appendages of the other side and the practical termination of the reproductive life of the woman.

DR. WILLIS G. MACDONALD inquired as to the relation of the common iliac artery and vein to the tumor, to which Dr. Hall replied, "they were behind it, but the ureter was lifted up in front of it."

DR. MACDONALD, in resuming, said that an investigation of the character of retroperitoneal tumors and differences of opinion among pathologists may very reasonably occur; but the clinical history usually shows, either before or subsequently, that by far the larger proportion of these tumors have a sarcomatous element in them, while they may be of the nature of fibroma, fibromyxoma, etc., yet after certain years of growth there will be more or less evidence of spindle-celled sarcoma. A few months since he adopted a somewhat different technic in the removal of a retroperitoneal tumor, which he described at length.

RUPTURE OF THE PUERPERAL UTERUS, WITH CASES.

DR. JAMES F. W. ROSS, Toronto, read a paper with this title. The essayist said that it is well known that rupture of the uterus might occur before or during labor. To diagnose a rupture of the uterus before labor was extremely difficult. It is a subject about which very little is known. The cases under discussion were not those before labor, but those occurring at the time of labor. Every practitioner should be familiar with the symptoms of this condition, so as to be able to recognize it at as early a date after its occurrence as possible. He then mentioned the different causes of rupture of the uterus, which are well known.

He stated that the question as to whether rupture of the uterus occurs more frequently in the first or in subsequent labors is still one that has not been settled. Some authorities claim that rupture of the uterus is more frequently met with in primiparous cases than in multiparous ones; others claim it is more frequently met with in multiparous than in primiparous cases. Some state that rupture of the uterus may take place before the membranes have been ruptured. He considers that the duration of labor has a great deal to do with the production of rupture of the uterus, as the organ seems more prone to tear after its structure has become impaired by continual and prolonged contraction. The fundus is less frequently ruptured than the body, and the body less frequently than the cervix. The posterior wall of the lower segment seems to be the commonest site of rupture, and the tear is generally found to run toward the left. These tears usually extend over a distance of three or more inches. He considers that cases of rupture of the uterus might be divided into four groups: 1. Those which are beyond hope from the first, that have the usual classic symptoms of rapid pulse, dyspnea, precordial uneasiness, nausea, vomiting, and cold perspiration. 2. Those cases that have, owing to delay, passed beyond the operable stage and have become ill with commencing septicemia and peritonitis, the peritonitis and septicemia drawing attention to the case, and this extra attention revealing the fact that rupture of the uterus has been present without giving rise to early symptoms to indicate its existence. 3. A class of cases in which rupture is not immediately fatal, in which it is early recognized, and in which the patient is in good condition for operative interference. 4. A class of cases that may occur in which rupture is never recognized, but in which septic symptoms develop without any evident reason. In a case in which a very rapid pulse follows a fairly severe labor and peritonitis sets in, rupture of the uterus must be considered when endeavoring to discover the cause of the abnormal course of the puerperium.

Intraperitoneal hemorrhage can be diagnosed by percussion in the loins. The essayist stated that he had diagnosed intraperitoneal hemorrhage in this way on several occasions. The percussion sound may change as a consequence of the changed position of the clot, and when it does change, it does so slowly. He stated that since reading a paper before the Buffalo Academy of Medicine in January, 1898, he had met with two cases of rupture of the uterus. These were related in detail. One case occurred at full term, and the other during the fourth month, the latter having been produced by an attempt to empty the uterus. In each case, drainage of the peritoneal cavity through the rupture and frequent irrigation were adopted. Each patient recovered after a long-continued illness. The rupture was not recognized in either case in time for interference by celiotomy.

In summing up the treatment of these cases he considered it necessary to treat the cases according to the class to which they belong. In the first class the patient is practically moribund before the physician in charge can call counsel. In the second class, in which there were no symptoms to indicate that rupture of the uterus had occurred, the treatment must vary from that carried out in Class 3. The treatment in the second class was that indicated in the cases reported, viz.: thorough drainage and thorough cleansing from below. He considers that an abdominal operation under such circumstances would be unfavorable and injurious to the patient. Already adhesions have formed to protect the general peritoneal cavity, and these must of necessity be broken down and increase the risk. In the third class of cases in which rupture is recognized, in which the patient is not moribund from shock and hemorrhage, there can be but one line of procedure to carry out, viz.: celiotomy, thorough inspection of the part, removal of blood clot from among the intestines, thorough stoppage of hemorrhage from the wound either by approximating sutures or gauze packing, and the establishment of thorough vaginal or abdominal drainage, or both. In the opinion of the essayist, suturing the rent was scarcely called for, as by this procedure the operation is unnecessarily prolonged, and the length of time consumed by such an operation is of importance. Anyone who has had experience with this tragedy of the lying-in ward must have noticed that the edges are so bruised as scarcely to hold a suture. To pare them off means increased hemorrhage and increased delay. He prefers packing with gauze, and is satisfied that the uterus afterward becomes perfectly normal. Hysterectomy under such circumstances must prolong the operation, increase the shock, and unsex the patient.

In the treatment of the fourth class of cases, or those unrecognized, the question of improvement in means of diagnosis must be considered. How can it be discovered when it presents no symptoms? When inflammation and septicemia are present, it is too late to make a diagnosis. He has not the fear of the exploration of the interior of the uterus ordinarily taught by the text-books. He does not consider this a sort of sacred chamber into which the finger of the accoucheur should seldom be put. He believes that in all cases of septicemia following labor, in which there is a greatly increased pulse, without any apparent reason, the interior of the uterus should be thoroughly explored with the finger to ascertain the absence or presence of a rent.

DR. JOHN M. DUFF narrated an exceedingly interesting case of accidental vaginal hysterectomy during delivery.

DR. W. JAPP SINCLAIR, Manchester, England, by invitation, stated that he had not seen very many cases of rupture of the uterus, and his experience has been that treatment is not very successful. He had seen a few cases in the hands of other practitioners, and, without exception, they had been the result of sheer ignorance and want of judgment.

DR. WILLIS G. MACDONALD reported a case in which the child and placenta had been delivered, and a number of feet of intestines came down and presented to the outside world, and an ignorant practitioner cut them off. Six hours later he was sent for. He opened the abdomen and used a Murphy button, but there was such a mixture of feces and blood in the abdominal cavity that the patient died.

WOUNDS OF THE LIVER AND BILIARY TRACT.

DR. W. E. B. DAVIS, Birmingham, Ala., read a paper on this subject, in which he said that penetrating wounds of the liver were not common. The surgeon may inflict such injuries in the treatment of hydatid cysts and abscesses of the liver. Severe wounds usually prove fatal. There is often injury to the biliary canals of the liver and the extravasation of bile contributes to the fatal issue. He reported three cases illustrating injuries produced by the surgeon.

In one, a male, aged 60 years, there was only one-half ounce of pus found in the right lobe of the liver, but in searching for this small cavity a wound of very considerable depth and great size—perhaps two inches in length—was inflicted. There was very profuse hemorrhage, which was controlled by iodoform gauze packing. Great quantities of bile were discharged for three weeks. The patient made an excellent recovery, and he attributes this result not only to the drainage of pus, but to the opening up of some of the biliary canals which resulted in the emptying of the liver.

Another patient was a woman, 30 years of age, in whom there were attacks of pain, fever, and jaundice from a movable stone in the common duct; the liver became very much enlarged, and during an attack of peritonitis an incision was made and the right lobe of the liver freely opened and packed with gauze. There was no pus in this case. The patient rapidly recovered. The liver returned to its proper size and the stone was passed some months after, when the patient was being prepared for a radical operation.

He also reported the case of a woman, 60 years of age, whose symptoms indicated obstruction of the common duct. The liver extended almost to the umbilicus. No nodules were to be made out on the surface. There being no obstruction in the common, it was decided that the obstruction was in the hepatic duct or its branches. A free incision was made into the right lobe of the liver, with the hope of opening some of the biliary canals and thus relieving cholemia. Death occurred a few days after, from exhaustion. The patient was almost in a dying condition at the time of the operation. A large malignant nodule was found at the autopsy, in the transverse fissure, which completely obstructed the branches of the hepatic duct.

Dr. Davis stated that wounds of the biliary tract beyond the liver produced death, not so much from the sudden escape of bile as from the continuous pouring of fresh bile into the peritoneal cavity. Gallons of fluid would not cause death if there were protective adhesions. He reported a case of gunshot wound illustrating this point, where the patient was cured by repeated tappings, large quantities of bile being removed at the first operation.

He also narrated experiments on animals where the adhesions had given way after two weeks and death resulted from peritonitis.

He said that rupture of the liver might be limited to the upper or lower surfaces, or that the organs might be completely torn through, the parts being held together by the veins. In four cases in which he had operated on dogs and had removed more than one-third of the liver, all died. In one case in which he removed the extreme left lobe of the liver the animal made a complete recovery.

He detailed six cases of operations on animals, illustrating the fact that small quantities of bile could be injected into the peritoneal cavity without harm. In one case he injected as much as five drams of bile.

He reported twenty-three cases of operations on dogs to demonstrate the effect of bile on the peritoneal cavity. In those cases where there was only a small escape of bile, the animals recovered; in those where there was considerable extravasation, the animals died in from one to three days. The omentum and abdominal viscera in these cases were highly bile stained, but there was not the redness of intestines that is observed in septic peritonitis.

The treatment of these cases consists in promptly opening the abdomen, controlling the bleeding by gauze packing, and drainage. The essayist reported a large number of cases in which he had produced wounds of the gall-bladder and ducts of dogs which had been successfully dealt with in this way. The opening in the bladder or duct would close as quickly as the fistula of a cholecystostomy.

DR. WILLIAM H. MYERS, Fort Wayne, Ind., followed with a paper in which he dealt with the past and present surgery of the gall-bladder and bile-ducts.

DR. JAMES F. W. ROSS said that his experience in gall-bladder surgery was confined to thirty-seven cases, reports of which will be published shortly in detail. He hopes other surgeons would follow his example and publish their statistics. The experimental work of Dr. Davis is borne out by clinical experience. He has had actual clinical experience that has satisfied him that with Morrison's pouch behind a long glass drainage-tube with iodoform gauze, surgeons do not need to hesitate in any case of gall-stones with severe adhesions to operate, because he believes relief can be afforded in some way.

DR. ROBERT T. MORRIS, New York City, spoke with especial reference to the entrance of bile into the peritoneal cavity, saying that a small amount of bile does not do very much harm unless it is accompanied by inflammatory products from the lumen of the gall-bladder. If we have mixed infection, or colon bacillus infection, which is so common in cases of gall-stones with empyema of the gall-bladder, then infection follows the course of the leaking bile more rapidly, the bile acting as a vehicle for carrying infection.

DR. JOSEPH EASTMAN, Indianapolis, Ind., stated that in the Transactions of the Indiana State Medical Society, published some years ago, a report by Dr. Kemper of Muncie would be found of a case of enormously distended gall-bladder pushed up against the abdominal wall, having become adherent, and the pus and gall-stones and substance of the gall-bladder sloughed their way through and the gall-stones were discharged externally. Dr. Eastman cited two interesting cases which put his methods of diagnosis to a severe test.

DR. FRANK C. FERGUSON, Indianapolis, Ind., exhibited a specimen showing the gall-stones still *in situ* in the gall-bladder. He has some experience in operating for gall-stones, and showed a Murphy button that had done duty twice in gall-stone operations.

DR. WILLIS G. MACDONALD said there can be no question that gall-stones do lodge in the common duct, notwithstanding the fact that opinions had been advanced to the contrary. He had himself operated on a case in which he removed gall-stones through the duodenum by an incision in it and dilatation, with a slight deviation of the opening of the common duct into the duodenum. Dr. McBurney, he said, had also reported two or three such cases.

DR. J. HENRY CARSTENS spoke of an interesting case sent to him which, he supposed was a diseased kidney, probably malignant, but which turned out to be one of gall-stones. The walls of the gall-bladder were an inch and a half thick. He had never seen anything like it. The gall-bladder was larger than his fist, with exudate and inflammatory products around it.

DR. M. ROSENWASSER spoke of the treatment of olive-oil in gall-stone cases, and said very little confidence could be placed in this method. It is very necessary to discriminate when a cure is said to be effected in these cases, by that or any other method.

To be continued.)

Philadelphia County Medical Society.

Sept. 27, 1899.

MYXEDEMA.

DR. A. A. ESHNER reported a case of this affection, exhibiting patient. The history of this case is as follows: Mr. A. B., aged 51, a native of Russia, when first seen complained of pain in the region of the epigastrium, radiating toward the hypochondrium. The bowels were constipated and the patient suf-

fered from nausea. Considerable mucus was expectorated. The facial expression is peculiar, with an exceedingly large flat nose, flabby cheeks, thick lips, tongue greatly enlarged, flat and filling the entire buccal cavity, making the speech thick. The muscles of the back of the neck are prominent, the fingers large and stubby, the thyroid palpable, the heart sounds rhythmic and quite clear. The perspiration at times appears to be excessive. Under desiccated thyroid—5 grs. daily—the abdomen decreased in size and the patient has become able to clinch the fingers.

DR. HAMMOND spoke of a case of myxedema in which there developed posterior to the great toe, a sinus with ulcerated edges, which showed no evidence of healing under prolonged treatment. One special feature of the ulcerated spot was that the area surrounding it appeared to be quite anesthetic.

DR. ROBERTSON spoke of a case in which a woman, after being frightened, suddenly developed exophthalmic goiter, and later myxedema came on. Her daughter also suffered from myxedema, rapid in onset. In one case there was a divergent squint present, but under the influence of proper glasses the sight improved. In one case there was a tendency toward hemorrhages from the mucous membranes.

DR. SOLOMON SOLIS-COHEN mentioned one case, for the most part confined to the soft palate, the uvula and arches being affected, the thyroid not demonstrable. He also referred to one which had been presented before the Society, in which myxedema and acromegaly coexisted in the same patient. He thought that the tendency toward hemorrhages in cases of myxedema might lead one to a false impression that the person was suffering from tuberculosis.

DR. MORDECAI PRICE asked as to the patient's appetite and ability to take food.

DR. HAMMOND asked whether or not anesthesia existed in the case presented, and also regarding the influence of heredity.

DR. ESHNER stated that the patient did not eat more than the ordinary person, and that in case of goiter there was always a strong hereditary tendency. There is a close relation existing between goiter and myxedema. In all these cases there must be some predisposing cause, perhaps to what is known as the neuropathic derangement. In the case reported, hemorrhages had not occurred. In regard to the electric change in myxedema none had been observed by writers on the subject.

Philadelphia Pathologic Society.

Sept. 28, 1899.

ULCERATIVE ENDOCARDITIS.

DRS. A. A. ESHNER and G. A. PFAHLER exhibited specimens of ulcerative endocarditis, and also of mitral and aortic valvulitis. In the former the patient was a man of 40 years, admitted to the hospital in March, 1899. Dyspnea was very pronounced on the slightest exertion, palpitation present, the pulse strong and accelerated. A thrill was present at the apex-beat and also at the base. Both systolic and diastolic murmurs were heard at the fifth, sixth and seventh costal cartilages. The temperature remained slightly subnormal. In July both the murmur at the base and the apex became roughened in quality. Later in the month sweats and subnormal temperature was observed, and on July 29 death occurred.

The autopsy disclosed the pericardium obliterated, the right auricle containing currant jelly clot, the right ventricle chicken fat clot. On the mitral leaflet was found a small roughened ulcer 2 cm. in diameter. The liver was atrophic, the lungs in a condition of edema, also showing tubercles.

MITRAL AND AORTIC VALVULITIS.

In this case the history was that of a man 42 years of age, admitted in July, 1899, complaining of dyspnea and pains in the chest. He had previously complained of pain in the precordia, and nine months previously had suffered from gonorrhea. Physical examination revealed a murmur at the apex-beat, transmitted to the axilla. In the urine were found both albumin and hyaline casts. Slight jaundice was present and, at times, dyspnea was marked. On August 7 it was noticed that the cachexia had increased, and also that a petechial rash was present. A fetid gangrenous ulcer finally developed in the mouth. Death occurred on August 11.

At the post-mortem the body was found much emaciated, and icteric. Adhesions existed at the apex and base of the heart, and there was found atheromatous condition of the aorta extending to the valves. In the walls of the right ventricle was found a protrusion projecting into its cavity. The lungs were soft in consistency. The splenic pulp was not increased. The mucous membrane of the ilium was swollen, the liver yellowish-brown with yellowish-brown bands surrounding its lobules.

DR. J. DUTTON STEELE thought, in regard to the protrusion into the ventricle, it might be one of aneurysm of the sinus of Valsalva, twenty-seven cases having been reported, and two in which the aneurysm had ruptured into the right ventricle.

DERMOID CYST OF OVARY.

DR. J. H. MCKEE exhibited a specimen removed from a child 7 years of age. The tumor had been very large, extending from the spleen to the right anterior superior spinous process of the ilium. It had a lobular appearance and presented the characteristics of a tumor of the left kidney, or an enormous spleen. It was bilobular and contained skin, hair, bone, cartilage and vascular tissue.

BRAIN TUMOR.

DRS. DAVID RIESMAN and A. C. WOOD presented a specimen of brain tumor occurring in a man 51 years old. When 11 years of age, he had received a severe fall, giving rise to what was termed "spinal disease." More recently he had suffered considerably from sick headache, mostly confined to the right side, and relieved by application of leeches. There had been no disturbance of hearing. The patient finally developed an apathetic condition and also a slow hesitating speech, but no aphasia. Five days before death, left-sided hemiplegia came on, involving the arm and leg, but not the face. The temperature remained normal or only slightly elevated; the pulse 114 or 115. There was no albumin in the urine.

Autopsy showed a brain tumor in the lower right frontal lobe. It fluctuated and was covered over by brain tissue and pia, and on incision was found to contain about 15 per cent. of fetid greenish pus, showing evidences of infection with the bacillus pyocyaneus, as is usual in most brain abscesses.

Brain abscesses in this region are rare. The cause for the abscess remains obscure.

DR. W. M. L. COPLIN spoke of a case of brain abscess in which the ethmoid and sphenoid sinuses had been involved. In this case hernia cerebri developed. Infection was also by the bacillus pyocyaneus.

DR. D. L. EDSALL spoke of a case of brain abscess occurring in a child. The case had been diagnosed as one of melena. The child had subsequently become slightly blind, and convulsions developed shortly before death. No avenue of infection could be found.

Detroit Academy of Medicine.

TUBERCULOSIS OF PERITONEUM.

DR. HAL C. WYMAN read a paper with this title. After speaking briefly of the possible modes of entrance of the tubercle bacillus into the peritoneum, the chief diagnostic points were described; the impaired general health; fluid in the abdominal cavity; an abnormal temperature, and constant tenderness and pain. The surgeon usually sees a case after catharsis and antisepsis of the intestinal tract has been used by the physician to little effect. These methods may be successful in some cases, but never have been so in the writer's experience. Operative interference, in which the abdomen has been opened and drained, seems to be essential. As adjuvants to the operation, pure air and an entire change of environment are very useful. The kind of food that was used while the disease was being contracted should so far as possible be replaced by another sort. Where a change of climate is possible some good can be secured by a change in the house, especially if the new house is more hygienic. An instance was cited where a patient after operation was put in a house built especially for her; her diet was also changed as much as possible and as a result she rapidly improved and was entirely cured.

THE X-RAY IN LARYNGOLOGY.

DR. WADSWORTH WARREN read a paper on this subject, and said in substance:

To the laryngologist the X-rays have thus far been chiefly of service along four lines. 1. In the detection and localiza-

tion of foreign bodies. 2. In determining ossification in the cartilages of larynx and trachea. 3. In the diagnosis of intrathoracic growths involving the respiratory tract, causing either compression of the trachea or some form of vocal chord paralysis. Rosenberg's report last year, in the *Archiv f. Laryngologie*, contains the most complete information on this subject. The shadow on the fluoroscopic screen depends on the density and specific gravity of the growth examined: carcinoma giving a denser shadow than lymphoma; the shadow being more dense wherever calcification has taken place. Aortic aneurysm has always a characteristic circular or elliptic shape, pulsating equally in every direction. An esophageal carcinoma attached to the aorta would pulsate with it, but the pulsation shadow would not be symmetric in every direction. In the early diagnosis of tubercular processes in the lungs, Kelsch of France proposed the application of the rays for the early diagnosis of tuberculosis in the army. Trudeau suggests that the height of the excursion of the diaphragm and presence of a light shadow in suspected areas may help toward reaching a correct conclusion before other signs are noted. Much experience is necessary before the observer can accurately interpret delicate variations in the shadows seen with the fluoroscope.

Treatment of pulmonary tuberculosis by the X-rays has proven unsatisfactory and inefficient. Successful results in treating lupus of the face have been reported by Albers, Schönberg, Kümmel, Krause, and others. The writer reported a case, a child 3 years old, in whom a foreign body had been aspirated. Variations in the symptoms, caused by excursions of the object in the trachea and bronchi, made its localization a matter of uncertainty. The fluorscope showed a shadow at the level of the second and third tracheal rings. A simple tracheotomy afforded opportunity for the removal of a metal hook, five-eighths of an inch long and one-fourth wide, the child making an uneventful recovery.

In another case it had been possible with the fluoroscope to accurately outline a thick-walled abscess cavity in the lower lobe of the right lung, occurring after imperfect resolution in a case of pneumonia. The patient, 70 years of age, and his family, rejecting surgical interference, very successful drainage was obtained by placing the patient on a cot, the foot of which was raised twelve inches from the floor. Profuse expectoration occurred while the patient was in this position. This procedure was resorted to for two hours each morning and one hour in the evening, with great benefit, the patient making decided gain in weight and strength.

In a third case, a man 65 years of age, the symptoms closely simulated those of spasmodic stricture of the esophagus, with noisy deglutition and eructations of food. This case had been variously diagnosed as a pulsating diverticulum of the esophagus, chronic pharyngitis, and aortic aneurysm or dilatation. In the writer's opinion the trouble was caused by a solidified mediastinal or peribronchial lymphatic gland, at the side of and behind the esophagus. The fluoroscope showed an irregularly semicircular shadow at the left side of the sternum at the level of the first rib. Since this opinion was given the expected laryngeal complication has appeared, abductor paralysis of the vocal chord. In a case reported by Chiari the shadow was interpreted by some observers as an aortic dilatation, but the section showed an esophageal carcinoma attached to the aorta and pulsating with it. Sendziak of Warsaw has reported an analogous case where an enlarged lymphatic caused like symptoms.

Detroit Medical and Library Association.

Sept. 25, 1899.

ANATOMY OF THE TEMPORAL BONE.

DR. E. AMBERG presented a paper on this subject, and said that nowhere else do we find so many parts of the system in one small space, nor can we find so many difficulties in the treatment of serious affections than in this bone; further, the difficulties are increased by the fact that the mastoid portion shows a great many variations, which require the greatest attention when surgical interference is necessary in diseases of this portion of the bone. He presented a large numbr of specimens of the temporal bone and various photographs illustrating variations in the size and configuration of the mastoid. He referred to Professor Trautmann's extensive investigations along this line, with reference to the situation of the lateral sinus and the cause of its displacement, the end in view being, if possible, to be able to tell, from a given individual, by certain fixed methods, the position of the lateral sinus, that it might be avoided when doing a mastoid operation. Ten signs were enumerated, which Trautmann found when the lateral sinus was displaced forward. The Doctor, in his examination of five skulls, found that he agreed on the whole, with Trautmann. Regarding the principles on which surgical operations on the mastoid are to be conducted, he believes that the outer opening must be made so large that a good view of the cavity in the bone may be obtained, and that the chisel is the best instrument for reaching this cavity. Besides the points above emphasized, the following he considerd important: Operations on the ear should be done only after considerable practice on the dead body, or on specimens; the field of otology has become so large that the time seems not to be far distant when the combination "oculist and aurist" will cease.

Wayne County Medical Society.

Sept. 21, 1899.

ULCERATION OF THE RECTUM.

DR. R. HISLOP read a paper on this subject. The main points introduced were: An accurate diagnosis of the disease is all-important; non-malignant ulcers are often deceptive because of the absence of pain; the operator's fingers and thumbs are better than any mechanical appliance for dilating the sphincter ani, because they are least liable to tear the mucous membrane during the divulsion; women do not tolerate so wide a dilatation of the sphincter as do men; suppositories for ulceration low in the rectum are undesirable, because all druggists are not alike in producing a proper suppository.

Sept. 28, 1899.

CROUP.

DR. H. R. HENDERSON read a paper on this subject and gave the different diagnosis between time, membranous, and false or spasmodic croup. He said they were often very difficult to distinguish, but the history of onset, frequency of attacks and subsequent course will make diagnosis sure. A little chloroform, held to the nostrils of the child, will, if spasmodic, cause an immediate relief; while the symptoms of membranous croup will not be changed by such a procedure. The classic symptoms of membranous croup were enumerated. The preventive treatment consists in keeping up the general tone of the child's system and removal of existing causes. For the active treatment, hot poultices, steam inhalations, anitomy, ipecac, and antipyrin were given as useful, when membranous croup is diagnosed, diphtheria antitoxin should be given at once; calomel fumigations, or if the dyspnea is urgent, intubation. The Doctor emphasized the point that antitoxin should always be given in case of doubt.

The Phenomenon of Pain.—As a result of some experiments on the phenomenon of pain, made by Arthur McDonald of the United States Bureau of Education by means of a "temple algometer" he finds that in general pain decreases as age increases; the left temple is more sensitive than the right; as is also the left hand over the right. There is an increased obtuseness to pain between the age of 10 to 11, a decrease from 11 to 12, an increase from 12 to 13; from 13 to 17, while the right temple increases in obtuseness, the left temple increases in acuteness. Girls in the private schools, who have wealthy parents, are much more sensitive to pain than girls in the public schools whose parents are not wealthy and who are accustomed to work. University women are more sensitive to pain than are washerwomen, but less so than business women; there seems to be no necessary relation between intellectual development and pain sensitiveness, and an obtuseness to it seems to be due more to hardiness in early life. To summarize, acuteness to the sensitiveness of pain is greatest with girls of the wealthy classes, then with self-educated women, then with business women, then with university women and lastly with washerwomen.

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SATURDAY, OCTOBER 14, 1899.

RENAL INSUFFICIENCY.

We have taken occasion twice, recently[1], to discuss the condition described by Koranyi as renal insufficiency, and we wish now to record some additional observations made by the same authority. The subject is rather a difficult and intricate one, and while, perhaps, the utility and the practical value of its study may not yet be apparent, it must be borne in mind that no truly scientific discovery is without some utility and value, although it may not be capable of immediate application. In any event, due credit and deserved encouragement should be accorded those engaged in the pursuit of studies of this and like kind. In the present instance, however, there is already promise of fruit from the labors of those concerned in the investigation of the subject in question, and we may look for a distinct addition to our therapeutic resources in the management of numerous morbid states of the kidneys attended with deficient functional activity, as an outcome thereof.

In his latest communication on renal insufficiency, Koranyi[2] points out that, in the process of albuminous metabolism, the large albumin-molecule is decomposed into numerous small molecules, and these are eliminated by the kidneys. If the permeability of the kidneys for solid molecules is diminished, the retention of the molecules resulting from albuminous metabolism leads to increase in the osmotic pressure of the bodily fluids, and this may be recognized by an increase in the reduction of the freezing-point of the blood. It has been shown that such a reduction, exceeding 0.56 C. —not neutralized by exposure to oxygen—is characteristic of renal insufficiency. For physical reasons it is to be expected that, in the presence of the molecular concentration that attends renal insufficiency, the blood yields up its water with rather greater difficulty than usual, and it has been noted that nephritics sweat less freely than healthy persons. It is also probable that they exhale less moisture with the breath.

The aqueous content of the body is almost constant in health, and the kidneys play an important part in the maintenance of this constancy. The elimination of water by the kidneys adapts itself to the difference between the ingestion of water and its excretion through other channels. The amount of urinary water is, therefore, almost independent of the amount of solid constituents of the urine. If a healthy person drink little water, the freezing-point of the urine is lower, and if, on the other hand, he drink much, the freezing-point is higher. If the diseased kidneys retain their capability of adapting themselves to the needs of the organism with respect to the aqueous content of the body they will make good the failure on the part of the skin and lungs to throw off the usual amount of water in consequence of the increased concentration of the blood and the increased osmotic pressure. The amount of urine eliminated is, therefore, increased, and this is the more so as the state of the blood leads, also, in most cases, to some degree of polydipsia.

In health, there are considerable variations in the freezing-point of the urine, but in cases of diffuse disease of the kidneys the freezing-point of the urine fluctuates within the narrow limits and approximates that of the blood. Such diseased kidneys may be unable to excrete either a highly concentrated or a highly dilute urine. In some cases the accommodative capability of the kidneys is much diminished, whereas their permeability to solid substances is fairly well maintained. Such kidneys are incapable of concentrating the urine adequately, and polyuria results, a large amount of water being required to dissolve the solid substances eliminated. If the permeability of the kidneys to solid substances is considerably diminished, then inability to secrete a dilute urine results. The osmotic pressure is increased, less water is given off by evaporation, and slight polydipsia exists. More water is retained within the body, and diminution in osmotic pressure results. Under such conditions the retention of water may be proportionate to the retention of solid molecules, so that the increase in osmotic pressure may be neutralized by the renal insufficiency.

Renal dropsy may thus be attributed to increase in osmotic pressure in association with diminished accommodative capacity on the part of the kidneys.

The increase in osmotic pressure is due to albuminous metabolism, and the uremic poisons also are derived from the albumin-molecule, but though both arise from a common source, the former is not the cause of the

[1] Journal, March 4; Sept. 16, 1899.
[2] Berliner Klin. Woch., Sept. 4, 1899, p. 781.

latter. Fatal uremia was observed in animals when the freezing-point of the blood was lowered 0.57 and 0.55 C., while in surgical cases with renal insufficiency, notwithstanding a reduction in the freezing-point of from 0.8 to 1.2 C., uremia did not occur. It thus seems probable that the uremic poison consists of large molecules that do not materially influence the freezing-point. The occurrence of uremia depends on retention of these molecules, and this is independent of the relation of the small molecules, whose retention causes increase in osmotic pressure. A new purpose is thus injected into the therapy of renal insufficiency, viz., the correction of the increase in osmotic pressure at its source, namely the limitation of albuminous metabolism. Much good may be expected from the use of diuretic and diaphoretic remedies that increase elimination of the molecular elements, rather than that of the watery elements alone, together with the observance of a suitable diet and a medicinal limitation of albuminous metabolism. Increase in osmotic pressure can be diminished by means of a diet of carbohydrates, while hunger exerts an injurious influence. In the conditions under consideration, especially in the presence of uremic vomiting and diarrhea, curare has proved a most useful adjunct to ordinary diuretic and diaphoretic measures.

Koranyi sums up tersely, as follows, the conclusions that he has reached as the result of his observations: The poison of uremia is derived from albumin. The increase in osmotic pressure in cases of renal insufficiency is due to the retention of albuminous metabolic products, and it is an important factor in the processes that lead to the development of dropsy. Therefore, in cases of renal insufficiency limitation of albuminous metabolism is desirable from the standpoint of both the uremia and the dropsy. This object may be attained by means of a suitable diet, but best by the administration of curare.

ETIOLOGY OF MALARIA.

The originality which Koch has displayed in most of his previous work is again shown in his official report[1] on his studies of malaria at Grosseto. We learn from this report that he has been working at Grosseto in Tuscany, Italy, in conjunction with Professor Trosch and Dr. Ollwig, during the past summer season. This town is notorious for the prevalence of malaria during the hot season, which induces thousands of the inhabitants to leave it during the summer. Researches in the large public hospitals, as well as in the private practice of the sanitary officer, Dr. Pizzeti, showed that prior to June 23 there were relatively a small number of fever cases, and that these were invariably relapses of infections dating back to previous summers. After this date, however, new infections occurred in such numbers that the term "epidemic" could be used. The diagnosis was based on the presence of parasites in the blood in 408 instances, confirmed by the microscope as well as the clinical history, while all suspected cases in which the parasites were not found, proved to be not malaria by the subsequent course. Of the 408 cases, 15 were of the quartan type, 202 of the tertian variety, while 181 belonged to the estivo-autumnal class. The latter, identical in its parasite with the true tropical fever, was always a severe type of disease, however, without a death—under quinin treatment.

Since the parasite has never been found except in the blood of the human patient and in the body of certain mosquitoes, Koch offers the startling conclusion that malaria is acquired only through the stinging by mosquitoes which have previously fed on the blood of other malarial patients. On this assumption he predicts that it may be possible to eradicate malaria by curing all previous fever cases before the hot season arrives. In other words, he regards the patient with malaria as a menace to the public health in the same way as he had formerly shown this to be the case with cholera. But instead of isolating the patients or disinfecting, he proposes to make them harmless by the proper administration of quinin in order to prevent continuation of the infection and relapses. His answer to the question why no fresh infections were observed prior to June 23, although both old malarial cases and mosquitoes were in existence, is based on very seductive reasoning. The records of 1899, as well as of several previous years, show that new infections began to be observed about three weeks after the highest daily temperature had reached 27 C. (80.6 F.) When this maximum is reached in the open air, the temperature does not fall below 24 to 25 C. in the interior of the houses even during the night—in Grosseto. According to Koch's previous work on the proteosoma, the parasite of birds' blood which closely resembles the malarial germ in men, this minimum temperature is required for the maturing and propagation of proteosoma in the body of the mosquito. As eight to ten days are presumably required for the development of the germ in the mosquito—we can assume the inoculation period in man to be about the same time—and the correspondence of the air temperature with the season of fresh malarial infections is appreciated.

Four varieties of mosquitoes were found, viz: a *Phlebotomus* variety, *Culex nemorosus*, *Culex pipiens* and *Anopheles maculipennis*. The two former did not contain parasites in any instance, and are presumably harmless. In forty-nine houses in which the disease had occurred, *Culex pipiens* was either found or its larvæ were detected on the adjoining grounds. In one case the insect contained sickle-shaped germs in large numbers. The *Anopheles maculipennis* was present in many of the houses, and in seven insects various stages of the germs were found. But as it was often entirely absent from infected regions, Koch does not regard it as the only dangerous mosquito, as some Italian observers have done. For therapeutic purposes Koch gave large

[1] Deutsche Med. Woch., Sept. 14, 1899; JOURNAL, p. 929.

single doses of quinin, but only during the interval. One gram sufficed in tertian and quotidian forms, but the tropic variety required two grams. Usually two doses given in this manner sufficed to put an end to the attacks for the time. He advocates a continuance of larger doses at intervals of several—up to ten—days, for a longer period in order to prevent relapses. How long the drug must be continued for this purpose he expects to learn from systematic observations to be kept up at Grosseto by Professor Gosio.

THE AMEBA CILIATA IN DISEASE, A NEW THEORY OF THE ORIGIN OF SOME OF THE ACUTE INFECTIOUS DISEASES.

In the *New York Medical Journal* for September 30 and October 7, there appears a lengthy contribution from Dr. Henry Gereon Graham of Chicago, in which are advocated some novel theories as to the origin of some acute infectious diseases, and he builds on them an ingenious speculative structure. The ameba ciliata which, it is said, occurs in the ordinary drinking water is claimed to be a pathogenic agent of great power and importance, because it may contain in its interior various microbic parasites such as the typhoid bacillus, the bacillus proteus vulgaris, a pathogenic spirillum capable of causing dysentery, the pneumococcus of Fränkel, etc. The type of disease produced by the ameba will therefore depend on the kind of parasite it happens to carry. When thoroughly loaded down, a serious complication of diseases might arise. The tissue or organ invaded also takes part in determining the kind of disease which would result. It being the habit of the ameba to move "in schools," very severe infections may arise. When evenly distributed throughout the system, without concentration at one point, there results malaria or malignant edema, according to the parasite carried. While the ameba ciliata is in itself of little pathologic significance, its importance as a morbific agent depends largely on the protection afforded its contents from the action of all kinds of destructive agents, and also on its power to penetrate tissues and organs not directly accessible from the external world. In other words, the ameba plays a rôle similar to the mosquito in malaria. It is suggested that the spleen arrests and destroys embryonic forms of minute organisms of this dangerous class which are commonly present in fresh water. The ocendosare of the ameba, whence it escapes when the explanation, stranger than any one heretofore proposed, namely: it is caused by the escape of the fluid in the endosare of the ameba, whence it escapes when the ameba dies. As is so frequently the case with scientific discoveries of various kinds, this has also been foreshadowed in an imperfect and unconscious manner by other workers. Thus, Ziegler's description of the cellular infiltration in the lymphatic apparatus of the intestine, in typhoid fever, is said to be a correct statement of the ovules of the ameba. Osler, however, who speaks of epithelioid cells with several nuclei, probably had before him the ameba itself, in the resting stage. We are also told that some of the white blood-corpuscles and some of the pus corpuscles in urine in a number of infectious diseases and at other times are often nothing more nor less than the ovules of the ameba ciliata.

We have touched on some of the principal points in the communication. The investigation is not complete, inasmuch as the nature of the bacteria and other organisms which it is claimed the ameba harbors has not been determined according to our generally accepted methods. Indeed, we fear that deficiencies in technic and otherwise have misdirected the author's industry and led him to conclusions that may not be generally accepted as correct.

ANOTHER "NEW" CURE FOR CONSUMPTION.

Dr. Carlo Ruata, professor of materia medica and pharmacology in the University of Perugia, has, according to the Rome correspondent of the *Lancet*, a new cure for consumption. At a meeting of the Umbrian Medical Congress, Professor Ruata explained his "cure," as the correspondent says, to a large and sympathetic, if not a wholly convinced audience. Briefly stated, it consists in the graduated continuous inhalation of alcohol, creosote and chloroform. Eleven typical cases of pronounced tuberculosis were perfectly cured. Out of another series of cases, 32 in number, in 22 the progress of the disease was so arrested as to put them out of danger. The Congress expressed satisfaction at the report and, while reserving judgment, congratulated Dr. Ruata on having devised a new line of treatment, "which has only to be developed if in some respects modified, to give it what Baccelli called the rights of citizenship in clinical medicine." If we mistake not, what Dr. Ruata recommends as a new method has been used in this country for several years.

INTERNATIONAL MEDICAL BIBLIOGRAPHY.

A leading French medical journal, the *Gazette Medicale de Paris,* quotes the editorial in the JOURNAL of August 5, on medical bibliography, admitting the justice of its statements, but protests against the inference it sees in it that the *Index Medicus* should be an American enterprise. Heretofore, such has been actually the case, but we have no national prejudice in the matter and will gladly yield the honor of its publication. The difficulty has been that American medical literature, as we have often pointed out, is little known abroad, hence a complete medical bibliography could really only be produced in this country. This difficulty still largely exists, though we trust this will not always be the case. The assumption is, therefore, somewhat justifiable, that if the publication of the *Index Medicus* is to be resumed, and we hope it will be, it will have to be a cis-Atlantic enterprise.

REGULATION OF MARRIAGE.

The JOURNAL has already noticed the Michigan law making it a felony for any person with uncured gonorrhea or syphilis to marry. The Health Commissioner of Detroit has introduced a resolution to be voted on at

the next board meeting, that it urge "all persons legally authorized to perform the marriage ceremony to require a certificate of health from a reputable physician before proceeding to perform the ceremony." One difficulty of such a regulation will be the determination as to when syphilis or gonorrhea is cured, medical opinion having, as is well known, a wide range as to this special point. If, for example, the Noeggerath theory of latent gonorrhea happens to be held by the physician, it will be difficult for him to honestly grant the desired certificate, and the question of when one is through with syphilis is one of the greatest uncertainties in medicine. Undoubtedly the law will be rather liberally interpreted, but the position of the reputable physician who certifies to a cure, in view of possible after-results, is not altogether an enviable one. The object of the law is excellent, but we see some of the difficulties of its execution even if the resolution proposed carries and the clergymen who do most of the marrying, and the reputable physicians both attempt to honestly carry out its provisions. As an experiment in a special line of sociology, it is well worth observing.

TRANSMISSIBILITY OF TUBERCULOSIS THROUGH MILK.

Considerable positive evidence exists of the danger from use of milk derived from tuberculous cows, whether the udders are involved in the disease or not. Tubercle bacilli have been found not alone in such milk, but also in butter and cheese prepared therefrom. Additional evidence of a confirmatory character is supplied by the report recently issued by the director of the Jenner Institute of Preventive Medicine[1] to the effect that of one hundred samples of milk submitted from the Hackney District, seventeen contained tubercle bacilli of virulent character, as determined by animal inoculation. The tests with regard to twenty-three other of these specimens were not satisfactory. As it is not always easy to determine or to recognize the existence of tuberculosis in cows, it is a wise precaution to boil all milk intended for consumption. When the disease is known to exist in animals, their milk should not be employed at all, and its sale should be prohibited, and, so far as possible, every effort should be made to recognize and to eradicate the disease. The danger is less insidious, though it likewise exists, with regard to the use of meat from tuberculous animals, but here the existence of the disease is likely to be obvious from the presence of tubercles, except in miliary tuberculosis, when the blood-vessels and the lymphatics may contain the bacilli. The safeguards in this connection consist, also, in thorough disinfection, by cooking, of beef intended for consumption, and suppression of the sale of all meat from tuberculous animals.

EVANGELIST D. L. MOODY ON PHYSICIANS.

Mr. Moody has the name of getting off a lot of good sense in his sermons. He believes in a practical religion; in a religion of truth and self-sacrifice; in a religion of noble aspirations and noble deeds; in a religion that elevates the individual, the community and the nation in every way that is good. During the past week one of his alleged co-workers acknowledged having endorsed the notorious Dowie, and not only this, but did not deny that he had allowed one of his children to die of diphtheria without calling in a physician. In one of his sermons, Mr. Moody took occasion to let this alleged co-worker know that the saving of souls and the healing of the body were two entirely different propositions, and among other things he said: "I do not believe that doctors are devils. The noblest profession outside of the ministry is that of medicine. Never yet in all my years of work have I called upon an able doctor, telling him of the sickness and need of some poor friendless person, that he did not at once go to the rescue, without money and without price. Some of the noblest men I ever knew have gone out as medical missionaries, devoting their lives to doing good with the skill and healing medicines the Lord has conferred upon them. And these men are called devils? God have mercy upon the man who says so—God forgive the man who holds such beliefs! God heals, and God heals through doctors and through medicines. Do not be carried away by the ravings of fanaticism. We have a new 'ism' in America about every year—beware of the 'isms!' What would I do if I fell sick? Get the best doctor in Chicago, trust to him and trust to the Lord to work through him! The doctors have done wonders as their knowledge has grown—they have reduced the dangers of death from diseases that once slew all they touched—and the doctors, if God helps them, will yet find a way to stop the ravages of other terrors!"

ALCOHOL AND LONGEVITY.

There has been going the rounds of the lay press a paragraph purporting to give the results of an inquiry made by the British Medical Association as to the longevity of total abstainers as compared with that of habitual drunkards, free and careless drinkers and the habitually temperate, understanding by the latter those who used alcohol only in moderation. The statistics given represent, it is stated, the analysis of 4234 deaths, and the longevity of the total abstainers is the lowest on the list. The item is passed around as a nut for the temperance people to crack, as an evidence of the harmlessness of alcohol and, inferentially, of the dangers of total abstinence. Appearing just at this time, after the meeting of the British Medical Association, the average reader is led to suppose that the statistics are recent and the official statement of the findings by a committee, or from other authoritative source, acting for the Association as a body. While no authority except the misleading statement "collected by the British Medical Association" is given for the figures, it appears probable that they are made up from a report presented to the British Medical Association by Dr. Isamberd Owen over ten years ago and published in the *British Medical Journal* in 1888, and that they do not fairly represent, as given in the extract, the actual statements made by him. They have been quoted in an article in the *Popular Science Monthly* for August, and probably from that source have gotten into the news items and editorials of the daily press. Their value as statistics in the form given is actually *nil*, but they favor certain views that badly

[1] Lancet, Sept. 25, 1899, p. 840.

need statistical support and hence were made the most of by the writer in the monthly to which we referred. Like the recent finding of Professor Atwater that alcohol is consumed to a certain extent in the organism, a fact never seriously questioned except by a few injudicious extremists, they afford a tempting chance for pseudo-scientific lucubrations. If statistics of value are really wanted on the subject of the comparative longevity of drinkers and abstainers, one would think that those that have stood the business test of application to insurance risks would be best consulted.

GIGANTISM AND TUMOR OF PINEAL GLAND.

The association of acromegalic giant-growth with tumors and diseases of the hypophysis is now a recognized fact. To what extent tumors of the pineal gland bear any relation to giantism is still uncertain. The number of observations is as yet very insignificant. The tumors of the pineal gland are exceedingly rare. The case recently described by Oestreich and Slawyk[1] is therefore of much interest. It concerns a boy, 4 years old. Since the third year the development of the body was unusually rapid and there soon resulted a form of giantism which, however, did not, as in acromegaly, involve the extremities to a predominating degree. The penis and the mammary glands were especially large. Simultaneously with the bodily overgrowth there occurred a marked psychic change: the previously lively child became quiet and retired. Choked disc, irregular pulse, a slightly spastic gait and increase in the reflexes were also noticed. Shortly before death, marked ataxia developed; convulsions set in, ending in sopor and death. The post-mortem showed a cystic psammosarcoma, as large as a small apple, of the pineal gland, internal hydrocephalus and giant growth. The hypophysis was normal. The authors consider it not impossible that tumors of the pineal gland may lead to anomalies of growth in the same way as in the case of hypophyseal growths and diseases. They point out that simple giantism in early life may later assume the acromegalic type. The only case in which tumor—sarcoma—of the pineal body was associated with giantism is that described by Henrot, but here there was also sarcoma of the hypophysis, and the overgrowth was the characteristic of acromegaly. The physiologic functions of the pineal gland are wholly unknown, and it remains to be seen whether light shall be thrown on the physiology of this body through observations on the results which apparently stand in some relation to its destruction by morbid processes.

CASE OF SUSPECTED RABIES WITH ISOLATION OF BACILLUS DIPHTHERIA FROM THE CENTRAL NERVOUS SYSTEM.

The importance of careful bacteriologic study of cases more or less closely simulating rabies is well demonstrated by Head and Wilson[1], of the The University of Minnesota, in their thorough study of a case of the nature expressed in the title. This case is therefore worthy of more than passing notice. The history and the clinical symptoms pointed toward the diagnosis of rabies: There was a definite history of a bite on the cheek by an unknown animal; after an incubation of two months, extreme pain and numbness in the region of the scar developed, followed by characteristic laryngeal and respiratory spasms on attempting to take liquids, the spasms being at first slight, later most pronounced, but toward the end feeble or absent; at first there was no fever, but later this became marked; the pulse was always rapid; insomnia, attacks of violent delirium with intervening periods of rationality, absence of all indications of simulation, and the fatal termination complete the clinical picture of rabies. The long period between the onset of the disease and death, namely fourteen days, was not wholly in harmony with the diagnosis of rabies, in which the death limit is generally placed at five to eight days. There were also albumin and casts in the urine—a very rare complication of rabies. The post-mortem showed only mild cerebral congestion. The bacillus of diphtheria was found in the ventricular fluids and in the medulla oblongata of the patient; the identity of the bacillus with the diphtheria bacillus appears to be complete in every detail. Emulsions of the medulla of the patient inoculated underneath the dura of rabbits gave rise after a long period of incubation to the symptoms of experimental rabies in this animal, and the same bacillus diphtheriæ was found present in the medulla of the rabbits. Subdural inoculations with 0.05 c.c. bouillon culture of the bacillus also produced a similar localization. When an emulsion of the medulla of the rabbit, inoculated with the human medulla, was mixed with diphtheria antitoxin and then injected, and when the emulsion and the antitoxin were injected separately, no abnormal symptoms appeared, but the diphtheria antitoxin had no protective effect as regards the virus of rabies. Hence it may be concluded that the virus of rabies was not present in the medulla of the rabbit, and inferentially this means that the virus was not present in the patient's medulla. Head and Wilson therefore conclude that the case in question was one of infection of the central nervous system with the diphtheria bacillus. The portal of entry was not determined. This close simulation of rabies, both clinically and experimentally, by cerebral infection with the diphtheria bacillus, is certainly extremely interesting. It is shown, in a striking manner, that the morbid phenomena produced by the cerebral infection of this organism differ profoundly from those produced in the ordinary localizations; and the difficulties of correctly diagnosing rabies are emphasized.

[1] Virchow's Archiv, 1899, 157, 475.
[1] Jour. of Exp. Med., 1899, iv, 451.

EPITHELIOMA AS A SEQUEL OF PSORIASIS, AND THE PROBABILITY OF ITS ARSENICAL ORIGIN.

There are recorded in medical literature a small number of cases of psoriasis treated for some time with arsenic and followed by the development of epithelioma. Hartzell[1] has recently brought together the cases illustrating this sort of an apparent pathogenesis of carcinoma. The whole number of cases is small—only eleven; yet it is too large to permit the assumption that the association of psoriasis and carcinoma is purely accidental. It deserves special notice that in a large proportion of

[1] American Jour. of Med. Sci., Sept. 1899; JOURNAL Sept. 16, p. 722.

the cases—5 per cent.—the carcinoma appeared before 40 years of age, and that in the same proportion the carcinoma appeared as primarily multiple tumors. In eight of the cases the prolonged use of arsenic is recorded. The direct influence of the arsenic is strongly suggested by the fact that in eight of the eleven cases of psoriasis followed by epithelioma some form of keratosis preceded for a longer or shorter period the appearance of the carcinomatous process; and in seven this keratosis was of the palmar and plantar variety, such as is now generally recognized as frequently caused by arsenic when taken internally for a long time. While Hulke and Butlin failed to find that workers in arsenic were especially liable to carcinoma, Geyer is stated by Hartzell to have observed that carcinoma, having its beginning in "arsenic warts" on the fingers, is frequent among the arsenic miners in Reichenstein, Russia.

While we are not justified in building elaborate theories in regard to the pathogenesis of carcinoma from the facts here mentioned, yet it is noteworthy that the early appearance and primary multiplicity of the carcinoma accompanying psoriasis indicate some special etiologic factor. Whether this is to be sought in the arsenic administered is, of course, an open question, but there are good arguments in favor of that view. Assuming the probability that the internal administration of arsenic may lead to the growth of carcinoma does not mean that all carcinomas are due to the same cause; there are numerous facts in connection with carcinoma which indicate the multiple character of the agents which appear to play a part in its causation. Carcinoma caused by arsenic would indicate that this chemical substance so acts on the epithelial cells as to profoundly modify their biologic character. Parasites of various kinds might be able to produce substances capable of a similar action. All theory as to the parasitic origin of carcinoma need not therefore be abandoned because it seems likely that arsenic may cause carcinoma. On the whole, it would seem to be of greater promise of immediate advances in our knowledge of the etiology and prevention of carcinoma if we could begin to study this dreadful malady from the standpoint of various smaller etiologic groups than is the case at present, when the investigators have staked everything on the demonstration or the refutation of some single, broad and general theory.

Medical News.

TWO DEATHS from hydrophobia were reported in Chicago last week.

PLANS have been formulated to establish a Jewish hospital in Omaha, Neb.

THE HOLY TRINITY hospital, Manitowoc, Wis., was dedicated September 28.

THE CORNER-STONE of the county insane asylum, Julietta, Ind., was laid October 9.

DR. EDWARD E. MACKENZIE, Baltimore, will leave that city to locate in California.

PROF. WILLIAM L. RODMAN, Philadelphia, has been elected an honorary member of the Lehigh Valley (Pa.) Medical Association.

DR. JOHN MADISON TAYLOR has returned to Philadelphia from his summer home at Bar Harbor.

DR. A. BEVERLY CAMPBELL, St. Joseph, Mo., president of Central Medical College, has returned from Europe.

DR. O. D. HAMLIN, Oakland, has been elected physician to the Deaf and Dumb and Blind Institute at Berkeley, Cal.

A SEAMAN just from Santiago died of yellow fever in Baltimore, October 8. A post-mortem was made by the city physicians.

SMALLPOX is reported at New Florence, Pa. There have been five cases, and the schools have been ordered closed for two weeks.

DR. PAUL O. OWSLEY, a graduate of the Johns Hopkins Medical School, has been appointed associate surgeon of St. Joseph's Hospital, Baltimore.

THE LATEST news from Portugal states that the plague has made its appearance in at least one place outside of the sanitary cordon being maintained for its restriction.

DR. THOMAS G. ASHTON, of the Jefferson Medical College, Philadelphia, has been elected associate professor of medicine in the Woman's Medical College of Philadelphia.

DR. D. C. JONES, for many years resident physician and surgeon of the Soldiers' Home at Leavenworth, Kan., has been appointed surgeon of the new soldiers' home at Danville, Ill.

DR. W. WYNN WESTCOTT has been elected president of the Society for the Promotion of the Study and Cure of Inebriety, London, the vacancy occurring by the death of Dr. Norman Kerr.

IN ANSWER to the request of the Six Nations Indians, who have a reserve on the Grand River below Brantford, Ont., the Provincial Health Department has organized a board of health for that district.

DR. J. P. ROTTOT, Dean of the Faculty of Medicine, Laval University, cedes his place as professor of clinics, to Dr. Demers, who will be replaced by Dr. Benoit. Lectures were resumed on the 4th inst.

A RESOLUTION was adopted at the last meeting of the Illinois State Board of Health, providing for the recognition of licenses to practice medicine when issued by states whose requirements are equivalent to those of Illinois.

BY THE will of Dr. Galvin Ellis, of the class of '46, and who died in 1883, $140,000 has been given to Harvard University. Most of this is to be devoted to the education of his descendants and to maintaining three professors at the medical school.

BEFORE the American Society of Municipal Improvements, which closed its proceedings in Toronto on October 5, Dr. W. C. Woodward, health officer, Washington, D. C., read the report of the committee on "Disposition of Garbage and Street Cleaning."

DR. BRYCE has been investigating an outbreak of typhoid fever at Campbellford, Ont., and finds that the cause is traceable to polluted wells. His department will recommend the passing of a by-law for the regulation of the waterworks system of the town.

DR. ALVAH H. DOTY, health officer of New York, sailed October 10 to visit the principal emigrant embarkation ports in Europe, for the purpose of obtaining a more concerted action on the part of the foreign au-

thorities preventing the departure for this country of infected persons.

THE DEATH of a surgeon, Marchand, is thus lamented in *L'Opinion Med.*, August 26: "He was if not one of the greatest, yet one of the stoutest of surgeons. His death will not cause so many tears to be shed as did his operations. He was *septique* through and through."

OWING TO excessive pressure from steam placed in a ceramic sterilizer at the laboratory of hygiene of the University of Pennsylvania, Philadelphia, a severe explosion occurred on October 7, of such a character as to severely wound four workmen employed in the laboratory.

THE ILLINOIS State Board of Health has received advices that fifteen cases of smallpox exist in Carbondale. From unofficial sources the list is increased to thirty. Ten cases have been reported from Mankanda. At Downs, where the diagnosis of thirty cases was disputed, there are six cases.

THE TRUSTEES of the University of Pennsylvania have elected John G. Clark, associate instructor in gynecology in the Johns Hopkins Hospital, to the chair of gynecology in the University of Pennsylvania Medical School, of which he was a graduate in the class of 1891. The appointment carries with it a position in the Faculty.

ACCORDING to the Montevideo correspondent of the *London Times*, the discovery has been made that a syndicate exists in that city which makes a practice of insuring the lives of poor people and afterward killing them for the insurance money. It is said that the syndicate has policies covering the sum of $150,000, and that at least one American company has been affected.

PHILADELPHIA'S city fathers, having granted the public request that an election be held for the purpose of deciding whether or not pure water is needed, have decided to place on the ballot certain words which might not be the best for pure water. The outside of the ballot will have the words, "Increase the debt;" the other ballot against pure water will read "No increase of debt."

THE HEALTH DEPARTMENT of New York City has applied for an appropriation of $1,135,924 for the expenses of the department for the year 1900. This is an increase of almost $24,000 on the appropriation for the present year. It is stated that the increased amount is for the improvement of the service in the Borough of Brooklyn, where the inspection system is regarded as inadequate.

THE CASE of the Illinois State Board of Health vs. the Independent Medical College has been appealed from the Circuit Court of Cook County and will be heard by the Supreme Court next week. As the college made no defense, the Circuit Court rendered a judgment of ouster. Anticipating adverse action, the Independent Medical College has changed its name to the Metropolitan Medical College.

DR. C. M. KARST of St. Petersburg, Russia, has bequeathed to the Board of Guardians of the Industrial Homes, 40,000 roubles ($20,000) on the following conditions: that during his (testator's) life the interest of the money all be paid to him annually, and that after his death the money shall be used for the purpose of building and maintaining a home for homeless children, the home to bear his name.

DR. W. FRANK ROSS, Champaign, Ill., who was cited to appear before the Illinois State Board of Health to show cause why his license to practice medicine should not be revoked, has secured an injunction against the Board pending a decision by the Supreme Court. The principal charges are as follows: Running a fraudulent institution, selling a diploma and seeking to obtain money by fraudulent representations.

THE ARRANGEMENTS made by the Chicago Health Department for prompt attention to emergency cases during the Chicago Day festivities were highly creditable to that Department; under the supervision of Dr. C. C. Hunt, three emergency hospitals were established along the line of march of the parade. Police ambulances were in accessible places and promptly responded to all calls, of which there were about fifty.

THE SUM of $50,000 has recently been given to the University of Pennsylvania, the object of which will be toward defraying part of the cost of the new dormitories now in the course of construction. The name of the donor has been withheld for the present. The property at Thirty-fourth and Locust streets has been acquired by the trustees, and on this site the new laboratory of medicine and the new gymnasium will be built.

A SPECIAL committee of the Illinois State Board of Health, appointed to investigate the advisability of establishing a state institution for the care of consumptives, has made its report to that body and urges that an appropriation of $200,000 be granted by the legislature for the establishment of a sanatorium. Action has been deferred until the next meeting of the Board. It is stated that the project has the approval of the Governor.

PROF. LEWELLYS F. BARKER, associate professor of pathology, and Mr. J. M. Flint, of Johns Hopkins University, returned October 2, after a seven months' absence. They left Baltimore last March, in company with Prof. Simon Flexner and others, to study in the Philippines, as noted in the JOURNAL. After spending some months in Manila and vicinity they visited Hongkong, China, and Bombay and Paona, India, where they made a study of the bubonic plague in all its phases.

REV. H. A. SLAUGHTER, two months ago a Baptist preacher in St. Joseph, Mo., is now president of the National School (Medical) of "Neropathy." His credentials represent a six weeks' course under the "celebrated magnetic healer," Weltmer, of Missouri. The course in neropathy covers from two to four weeks. Instruction is given during the day, in the evening, or by mail, for $100. A diploma is given, and according to the laws of Missouri, is good and valid. The name of the school is new, the branches taught are unknown, but the term "neropathy" seems not inappropriate for irregulars.

THE FIRST five cases of the plague at Oporto occurred among Spanish resident dock hands, who were evidently infected while handling germ-laden merchandise. This is a discouraging feature in the case, as, although the incubation period in man is about ten days, there seems to be scarcely a limit to the vitality of germs lurking in clothing and merchandise. The Paris dailies state that Dr. Salambeni was injured in the knee by a stone thrown by the populace at the little party of medical men on their way to hold the autopsy of a case. Dr. Hauser writes from Madrid, to the *Deutsche Medicinsche Wochenschrift*, that the Yersin serum has not proved effectual.

THE MILWAUKEE (Wis.) Medical College opened its new term October 3, with an enrollment of 200.—The opening exercises of the Woman's Medical College, Baltimore, were held October 2, and those of the medical department of the University of Tennessee, Nashville, the same date.—The Woman's Medical College, Philadelphia, opened September 26.—The Medical Department of Toronto University opened for the session on Monday evening, the 2d inst. Dr. Primrose delivered the opening lecture, on "The Life of John Hunter, The Father of Surgery." At Trinity Medical College on the afternoon of the 3d inst., Professor Clark, D.C.L. of Trinity University delivered the opening lecture, taking for his subject, "The Alcoholic and Tobacco Habits in their Effects on Student and Professional Life."

Correspondence.

Canada.

(From Our Regular Correspondent.)

TORONTO, Oct. 7, 1899.

ONTARIO AND DIPHTHERIA.

The Provincial Board of Health has issued a circular to the chairmen and members of the local boards of health throughout the province, calling attention to the still notable prevalence of diphtheria in Ontario, as instanced by the following figures: in 1891, there were 952 deaths from this disease, while in 1898 there were 634. In order to show the beneficial results that have accrued from the employment of antitoxin in this, since its introduction, the circular tabulates figures taken from the annual reports for 1898, of the Metropolitan Asylums Board Hospitals of London, England; and also evidences by age, the notable falling off in the mortality statistics from the first to the fifth year. After this citation, the local boards of health throughout the province are called on to put forth every effort to obtain the earliest information possible in regard to existing cases of diphtheria, and if necessary to supply the serum to those who are too poor to purchase it for themselves. "The influence of antitoxin in the occurrence and course of diptheritic paralysis," is pointed out; and the necessity emphasized for the earliest possible administration of the serum, as the earlier it is given the less likely the incidence of paralysis. The consensus of opinion in Ontario is that when the antitoxin is given at the very onset of the disease, there is not the tendency to paralysis as when given later on, and in the first instance, the paralysis nearly always remains mild. Copies of this circular have been sent to every practitioner in Ontario; and the clearing of the decks for action in a determined onslaught on this disease is certainly to be commended on the part of the provincial secretary of the Board of Health, and it will be interesting to watch for the results in his next annual report.

A CREMATORY FOR WINNIPEG.

Dr. M. S. Inglis, M. H. O., is agitating for a by-law to provide for the construction and maintenance of a city crematory. Under the present arrangements, the refuse of the city is gathered together in the western confines of the city, in a "mountain of filth," whence its foul odors are disseminated broadcast, at times even reaching to the General Hospital. Annually this pile increases in size to the extent and by the addition of 30,000 tons of garbage, which condition of affairs has been going on for the last fifteen years. The health officer describes the condition as extremely unsanitary and expensive, and it does not ultimately dispose of the garbage at all. Under the existing laws the city has no right to create a nuisance any more than a private citizen has. The present system costs the city $25,000 annually, whereas it is estimated that cremation would reduce that materially. Although a by-law for this purpose was submitted to the people and voted on at the municipal elections in December last, it did not meet with success, no doubt owing to the fact that other by-laws were coupled with it. Dr. Inglis asks that a separate and distinct by-law for this special purpose be submitted to the people at the next municipal elections.

JUBILEE HOSPITAL, WINNIPEG.

There was a special meeting of the Board of Directors of the Winnipeg General Hospital, September 27, when it was decided, on account of the increased work, that an assistant woman superintendent should be appointed. Miss C. Thompson, a graduate of Johns Hopkins, received the appointment for one year, at the end of which time one of the graduates of the Winnipeg Training Hospital will be substituted. The new jubilee addition to the Hospital is now ready for the reception of patients; and on October 5, the building was thrown open for inspection by the general public. For surgical cases, the intermediate wards are now ready; and the daily rate for patients in these will be $1, payable in advance. Patients in these wards may be attended by any physician they may engage, who is duly qualified to practice in Manitoba. No patients will be received in these wards unless they are to be attended by their own physicians and for his fees they must be responsible.

NEW MATERNITY HOSPITAL FOR MONTREAL.

Lord Strathcona has contributed $10,000 for this undertaking. The facilities for studying practical obstetrics by the students of McGill, and the training of nurses, have heretofore been somewhat cramped by the limited opportunities afforded by the present maternity. Mrs. W. R. Miller, president of the hospital, has been working assiduously in the direction of the construction of a new and more modernized building, and has thus far been liberally rewarded by Lord Strathcona's handsome gift. Heretofore the nurses of the Royal Victoria and General Hospitals, in order to perfect themselves in this important work, had to finish at the Sloane Maternity in New York; but as soon as the new maternity is erected, better clinical instruction will be afforded both to the students of McGill and the nurses in training at the two aforesaid hospitals. The whole institution will be thoroughly reorganized, and in the governing body, McGill and the Royal Victoria and General Hospitals will have equal representation.

CONSUMPTION SANATORIUM FOR TORONTO.

Several prominent medical men of Toronto, who have for the past two years been interesting themselves in the establishing of a home for indigent patients afflicted with tuberculosis, are about to have their efforts become successful. A fresh start and renewed interest was manifested when about twenty of the leading physicians personally subscribed funds toward the completion of the enterprise. Several philanthropic citizens were also appealed to, and their responses have been satisfactory. At first the institution will be on a limited scale, but will have a complete staff of consulting and visiting physicians. It is expected that before another month a suitable building will be purchased, and the patients will be admitted before the onset of severe weather. The provisional trustees include Mr. I. H. Cameron, Dr. L. M. Sweetnam and Dr. A. Jukes Johnson.

Book Notices.

INTERSTITIAL GINGIVITIS OR SO-CALLED PYORRHEA ALVEOLARIS. By Eugene S. Talbot, M.D., D.D.S. Philadelphia: S. S. White Dental Mfg. Co. 1899.

PYORRHEA ALVEOLARIS. By John Fitzgerald, L.D.S. London, Eng.: The Medical Publishing Co., Ltd. 1899.

These two works are devoted to a subject which has attracted, and deservedly so, considerable attention from both the medical and dental professions. Until the appearance of the pres-

ent works, it must be admitted that the disease, since its first description by Dr. J. N. Riggs, Hartford, Conn., has remained in a state of chaos as regards its etiology, pathology and treatment. It has been charged to the influence of civilization, but is as old as man, nay as old as his pliocene precursors. The two works under consideration agree in many respects, especially that the nomenclature of the disease—pyorrhea alveolaris—is especially unfortunate, since the term can be appropriately applied only to the later stages of the disorder. The work of Talbot is by far the more comprehensive and thorough, and gives an excellent summary of the literature of the subject. Beginning with the histology, pathology, and clinical history, it points out the various influences of the varied etiologic factors. It is shown that, contrary to the opinions of Galippe and others, the disease has no specific bacteriology, the bacteria found being principally—so far as pathogenic influence is concerned—those of pus. Dr. Talbot differs from Dr. Fitzgerald as to the influence of uric acid in the production of this disorder. He showed that the constitutional conditions—underlying the uric acid state and of which it is a barometer, so to speak—are expressions of general nutritional disturbances which act as a predisposing factor and not as the exciting one claimed by Pierce and others. The pathology in Talbot's work, and his discussion of etiology and treatment, are far more thorough than those in Fitzgerald's. From a medical standpoint, both books are to be recommended, especially as the subject has important relations to digestion, to systemic poisoning and to the constitutional neuroses. Talbot's book is well illustrated, and of the two it is the better suited for reference.

SURGICAL ANATOMY. A Treatise on Human Anatomy, in its Application to the Practice of Medicine and Surgery. By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia. In Three Volumes, Illustrated by About 400 Plates, nearly all Drawn for this Work from Original Dissections. Royal Octavo, One-half Morocco, pp. 1632. Price $8. Philadelphia: P. Blakiston's Son & Co. 1899. Vol. I. Devoted to Upper Extremity, Back of Neck, Shoulder, Trunk, Cranium, Scalp, Face.

The appearance of this first volume of an extensive treatise will be welcomed by all students of the intricate branch of medicines which is here treated. That this work has been twelve years in preparation indicates that the author has not undertaken the task of presenting the work without sufficient foundation and this is also an evidence of its practical value. The book is devoted to surgical anatomy in its strict application, and therefore the treatment of injuries due to trauma receives no attention, save that the methods employed in performing amputation, incision, stretching of the nerves and ligature of blood-vessels are mentioned. Its principal value will be derived by the student of anatomy who wishes to have presented to the mind's eye the preservation of form and the relationship of the structures which go to form the human body. Few books published do this as well as the work under consideration, and the fact that it is replete with illustrations drawn from the original is a credit to the author and a benefit to the profession. Some of the plates can not be improved on, save that it may be admitted that the production in colors might seem a trifle easier in presenting the relationship of the more minute details. In order to show its thoroughness, it is only necessary to mention that no less than twelve full-page plates are reproduced in order to accurately portray the surgical anatomy of the hand, and it is doubtful whether any better description exists in any work in the English language. Having presented a correct picture of how a proper dissection should look, it dispels, almost at once, the vague idea which one might have obtained by an improper dissection. If one should select the best plates among such a goodly number, as being of exceptional reproduction, Plates xx, cxxvi, cxxxiii, cxxxiv, and cxlvi, may be mentioned.

The author states in his preface that his original purpose was to furnish students a surgical anatomy, but he has gone farther, and given us a work that will be just as much welcomed by the general practitioner and surgeon as by the student. No work, no matter how well illustrated, can take the place of the cadaver as a method of studying anatomy, yet this book comes very nearly doing this. The index is voluminous, covering thirty-two pages, and will be of greatest value to the student. General considerations under the head of "Amputation" need revision. The book is admirably printed, on good paper, in clear type, and is a compliment to the publishers and a credit to the author.

THE HYGIENE OF TRANSMITTABLE DISEASES: Their Causation Modes of Dissemination, and the Methods of Prevention. By A. C. Abbott, M. D., Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene, University of Pennsylvania. Illustrated. Philadelphia: W. B. Saunders. 1899.

This volume mainly includes, as the author states in his preface, the subject-matter of a portion of his lectures on general hygiene, at the University of Pennsylvania. As the result of practical teaching experience, therefore, they have a value, and the book, it may be said, on the whole, meets expectations. It is well and clearly written, and contains a large amount of valuable information for the student, though there is not so much in it that ought to be new to the well-qualified physician. Like most other works that deal with vital statistics, it is occasionally a little misleading; the table on page 35, for example, would lead one to believe that the foreign-born were largely immune from scarlet fever, diphtheria, measles, whooping-cough, and other children's diseases, whereas it is really the scarcity of foreign-born infants that accounts for the figures. The author notices the fallacies of statistics in general, but not in particulars like the above, as would, we think, have been advisable.

The section on the special transmittable diseases is generally excellent and reliable. Dr. Abbott is positive on some points where opinions differ; for example, he unequivocally advocates state regulation of prostitution as an efficient preventive of venereal disease, and he denies, perhaps too unqualifiedly, the possibility of air transmission of typhoid fever. There are some that will probably disagree with him on these, and, it may be, some few other points. The inclusion of malaria among the transmissible diseases seems odd at first sight, though in view of recent discoveries and theories it is possibly correct.

The work will be of value, not only to the student, but also to the non-medical man interested in sanitary matters.

WHAT A YOUNG HUSBAND OUGHT TO KNOW. By Sylvanus Stall. D.D. Price $1.00. Philadelphia: The Vir Publishing Company. Toronto: William Briggs.

The author has treated this very difficult, and for this reason much neglected, subject from a high moral view-point. In the great lottery of marriage many a prize is turned into a blank because the recipient has neither the knowledge necessary to take care, nor does he appreciate the value, of the prize he has won. If every young man would read this book before he married, and live up to its teachings, his married life would be happier than it would otherwise have been. We say this in spite of the fact that we think the author has not gone to the best authorities for the information he imparts. We can not help but think too, that if much that the author has quoted from others had been omitted, his book would have been more worthy of commendation. His own part of the work is deserving of the highest praise.

HANDY BOOK OF MEDICAL PROGRESS. A Lexicon of the Recent Advances in Medical Science. Charles Warrenne Allen, M.D., and Jacob Sobel, A.B., M.D. New York: William Wood & Co. 1899.

This little book might well be described as an encyclopedic lexicon of modern medical terms, including all branches of

medicine, words and terms not found in any but the most recent dictionaries. In current publications many terms and neologisms are employed long before they find their way into textbooks, encyclopedias and dictionaries. An attempt is made to here give a list of the newer proprietaries, but this far from complete. The supposed formulæ are given in many instances. Much valuable information is given that is not easily found elsewhere, such as Schleich's formulæ, antivenin, etc.

THE MINERAL WATERS OF THE UNITED STATES AND THEIR THERAPEUTIC USES. With an Account of the Various Mineral Spring Localities, Their Advantages as Health Resorts, Means of Access, etc., to which is added an appendix on potable waters. By JAMES K. CROOK, A.M., M.D. New York and Philadelphia: Lea Brothers & Co. 1899.

The author states in his preface that a complete and discriminating work on the mineral waters of the United States has been distinctly needed. The truth of this will hardly be questioned by medical men. The treatises heretofore available have become out of date and were never complete. In preparing the present volume, he states that he has carefully examined all available literature, has addressed letters of inquiry to every spring resort accessible by the postoffice, and has corresponded not only with proprietors and agents, but with local physicians, army and navy officers and others who could give him the desired information, besides making personal visits to many important localities. As a result he has produced a handsome volume of nearly 600 pages, describing all the actually utilized springs of the country, and giving analyses of the waters and stating their medical uses. If anything in the book calls for criticism, it is the occasional use of descriptive accounts that appear as if possibly taken from the prospectuses of the projectors. An excellent index completes the volume.

Deaths and Obituaries.

THOMAS GEORGE CUSACK, M.D., N. Y. University, 1880, died at his home in Orange, N. J., September 20, aged 44 years.

FRANCIS B. SMITH, M.D., N. Y. University, 1850, died at Stowe, Vt., September 23, aged 76 years.

JOSEPH H. SMITH, M.D., Albany, N. Y., 1846, died at Plattsburg, N. Y., October 5, aged 78 years. He was once physician at Sing Sing prison and later at Dannemora.

JOHN T. GRIMES, M.D., died near Williamsport, Md., October 7, aged 70, of heart disease. He was a graduate of the Baltimore Medical College.

EDWARD BASIL SIMPSON, M.D., a graduate of the University of Maryland, and a bachelor, killed himself at Harney, Md., October 7, aged 60 years. He received his M.D. degree in 1862 and had practiced at Harney thirty-five years.

SHELDON SMITH SCOVILLE, M.D., Cincinnati College of Medicine, 1838, died at Lebanon, Ohio, September 22, aged 76 years. He held various local offices and was health officer of Lebanon for many years. He served in the Civil War as an assistant-surgeon of the Federal army, until ill health forced him to resign.

A. L. RANSONE, M.D., died at Hyattstown, Md., September 30, of cirrhosis of the liver. He was born in Norfolk, Va., Dec. 24, 1847, but had been a resident of Maryland for thirty years. He was attached to Mahone's command, C. S. A. during the Civil War, being in the cavalry service, and practiced in Baltimore for several years just after the war.

JAMES F. SMILEY, M.D., University of Michigan, 1862, died at his home in Marshall, Mich., September 29, aged 64 years. ....James R. Smyth, M.D., New York City, September 30, aged 47 years....Clifton G. Smith, M.D., University of Buffalo, 1887, died at Akron, Ohio, October 2, aged 35 years.

DEATHS ABROAD.

Dr. Addickes of Hanover, Germany, is dead from injuries by collision with an electric car, while bicycling....Joseph White, D.C.S., F.R.C.S., Eastbourne, England, died September 24. He was an ex-president of the British Medical Association.

Miscellany.

Michigan State Board of Medical Examiners.—The governor has appointed the following to serve on this board: Beverly D. Harrison, Sault Ste. Marie; Samuel Bell, Detroit; B. J. Whelan, Hillsdale; Austin W. Alvord, Battle Creek.

Health in Michigan.—Reports to the State Board of Health, Lansing, show the diseases which caused most sickness in Michigan, during the four weeks ending September 30, as follows: Diarrhea, rheumatism, neuralgia, bronchitis, dysentery, tonsillitis, cholera morbus, cholera infantum, pulmonary consumption, intermittent fever, typhoid fever. Reports from all sources show consumption reported at 5, typhoid fever and scarlet fever at 22, and diphtheria at 7 places more; whooping cough at 14 and measles at 27 places less; cerebrospinal meningitis at the same number and smallpox at 1 place more, when compared with the preceding month.

Air, Gases and Radiographs.—Dr. Bade has established that when the stomach or intestines are distended with air or gases they cast no shadow in a radiograph, and thus stand out with great distinctness. Radiographs of a fetus are given in the *Deutsche Medicinische Wochenschrift*, September 21, in which these organs infiltrated with air, are absolutely white in contrast to the prevailing shadows of the rest of the body. His experiments on man, to generate gases in the stomach, were unsuccessful in some cases on account of the vomiting induced, but he succeeded in obtaining a fairly good radiograph of his own organs in this way after taking tartaric acid and sodium bicarbonate to generate gas.

Physicians' Directory.—A corps of men are now at work throughout the country procuring information for the new edition of Polk's Medical and Surgical Register of the United States and Canada. This publication is now so firmly established, so widely known and universally used as to scarcely call for any comment, as it has become standard in the profession and is a book of daily reference. It is a complete directory of the medical profession of North America and all that pertains thereto. To issue such a work is a formidable undertaking, involving a vast amount of labor, but the facilities of the Messrs. Polk & Co. are exceptional. We predict for them still greater success in the coming edition, to be issued as early in 1900 as possible, and we cheerfully commend Polk's Register to the profession as an invaluable work of reference. Each succeeding issue has been an improvement on its predecessor, and we are promised that the next number shall be as near perfect as such a book can be made.

Venereal Diseases in Various Armies.—The only statistics available at the Brussels Conference, that were at all reliable, were those treating of venereal diseases in the army; the number of men admitted to the hospitals for this cause. According to *Sem. Med.*, September 30, Great Britain heads the list, with 194.6 per 1000 in England and 522.3 in India (1897); Italy, 90 per 1000; the Netherlands, 100 per 1000 in 1896 and 44.7 in 1897, including 6.5 as the proportion of syphilis; Russia, 36.1 per 1000, including 12 per 1000 cases of syphilis (1895); France, 51.6 per 1000, including 8.9 syphilis, in 1895, gradually decreasing to 37.5, including 7.8 per 1000 syphilis in 1895; Germany, 29.9 per 1000 in 1894, 25.5 in 1895-6. The peculiar benignity of syphilitic infection in China was mentioned by Blanc of Shanghai: "by the end of six months it is apparently all finished." The only severe cases he encounters are those contracted in Europe or America.

Philippine Notes.—Prof. Lewellys F. Barker of the Johns Hopkins Medical School gives some interesting details of his two month's experience in the Philippines, in study of the diseases prevalent there. The temperature is not so high as

one might suppose, but there is such a continued elevation of temperature and such a high degree of humidity that life is rendered very unpleasant. The nights are warm and it is difficult to sleep. Light woolen garments are best, affording protection against changes of temperature. It is easy to advise the boiling of all drinking water, but it is difficult to carry it out, owing to the inconvenience. The organization of the hospital at Manila was a surprise. One would scarcely believe that hospitals could be so perfectly maintained 7000 or 8000 miles from home. Great credit is due Col. Woodhull, surgeon-in-chief for the Philippines. There are two large hospitals in Manila, the first and second reserve. The women nurses are a great success. Their work is better than that of the hospital corps. It is important to continue the study of tropical diseases. It would be advisable for the government to send out for this purpose well-trained army men. The two most fatal diseases among the troops are typhoid fever and dysentery. A disturbing but not fatal malady is the skin disease called "dhobi itch." Dhobi means washerman. It is thought that the disease is caused by the imperfect washing of clothes, as the dhobis do not boil them. It is also spread by towels, etc. If an American going to the East will take proper precautions, there is no reason why he should not keep well. Dr. Barker went out to the Philippines opposed to expansion, but came back believing that their acquisition is for the best. The chances for development of trade are enormous. There is not much chance of the Philipinos becoming Americanized and it will be a long time before they can govern themselves.

Conclusions of Brussels Prophylactic Conference.—The three most important resolutions adopted by the Conference are: 1. Governments are urged to do everything in their power for the absolute suppression of prostitution among girls who have not attained their majority, a resolution inspired by the fact, already stated in the JOURNAL, p. 929, that the largest share in the propagation of syphilis was found to be directly traceable to prostitutes under 20 years of age. This conclusion satisfies both the regulationists and the abolitionists. While it demands active intervention for a sanitary end, it does not in any way conflict with the principles of morality and equity. 2. The second resolution adopted uniform bases for the collection of statistics in regard to venereal diseases in different countries. 3. The creation of complete and compulsory courses in venereology in medical colleges. The *Semaine Medicale*, reviewing the work of the Conference as a whole, observes that it was "pre-eminently critical." "It completely upset cherished traditions in respect to the regulation of prostitution as now practiced, which, with a few expeditious measures—rather police than medical—has been imposing the sweet illusion of great things accomplished. All the sanitary problems in regard to prostitution are thus presented in a new form, and demand for their solution solid bases which are still almost entirely lacking, especially in the line of statistics and of the relations between this branch of public prophylaxis and economic and social questions, morality and the law. Long and careful studies are required before any special measure can be elaborated, and they must vary with varying conditions and the degree of civilization. Any single prophylactic system is therefore irrational and impracticable." The Conference also passed resolutions in favor of founding a society for sanitary and moral prophylaxis, to publish a quarterly bulletin, with headquarters at Brussels and power to organize congresses. It was also decided that a second conference should be held at Brussels in 1902.

Scientific Instruments.—The United States circuit court recently had the question before it, in an application by the Massachusetts General Hospital for a review of a decision of the board of general appraisers, whether ordinary surgical instruments are "scientific instruments" within the meaning of a statute admitting free of duty philosophic and scientific instruments, imported for the use of institutions organized for educational and scientific purposes. The answer, it declares, is not free from difficulty. The evidence in the case showed that the surgical instruments in question were imported in good faith, for the use of the above-named hospital in its clinics and training school for nurses; that they were specially designed and adapted for use in surgery; and were such instruments as were ordinarily used by surgeons in the practice of their profession. The court holds such instruments to be scientific instruments, within the meaning of such a law as stated. It holds that scientific instruments may be said to be such as are specially designed for use, and principally employed, in any branch of science. Such use may be for the purpose of observation, experiment, or instruction, or it may be a use in connection with the professional practice of a particular science. The use of a surgical instrument by surgeons in the practice of their profession is as much a strictly scientific use as when employed in clinics and training schools, or for the purpose of experiment. All these uses are equally scientific, because they specially concern a particular branch of science. The use of philosophic instruments, from the nature of the subject to which they relate, may be said to be limited to observations, experiments, and discoveries, while the use of scientific instruments, from the nature of the subject to which they relate, may extend to other purposes. Under the doctrine of "principal use," it may be said that an instrument is not to be classed as scientific, but mechanical, when its principal use is in the trades or arts, because such use is not scientific. But to hold that an instrument specially designed and adapted for use in medical science is to be classed as scientific when principally used in surgical operations in clinics and training-schools, and is not to be so classed when commonly used by surgeons in the same operations in the practice of their profession, the court insists, does not commend itself to reason or to common sense.

"Christian Scientists" Split Asunder.—According to the *Philadelphia Press*, a determined schism has made its appearance in the church of the "Christian Scientists," with headquarters in Washington, in which city its legal title is the "Universal Church." The name of the new association, which organized this new church, is "The Reform Christian Science Church Association." The latter association has issued an appeal through its clerk, John H. Turner, for good workers in all parts of the world; in the United States it asks for one competent person in each Congressional district to organize field workers. The leader of the "Christian Science Protestants" is Oliver G. Sabin, editor of the *News Letter*, a "Christian Science" organ. It is announced that beginning with October 2, Mr. Sabin and other competent lecturers will give class instruction to all desiring to be taught "Christian Science" and its mode of healing, for the first ten days in every month except July and August. Mr. Sabin also proposes to publish in his paper a series of articles on "What is Christian Science and How to Heal the Sick." The preamble to the articles of incorporation announce the loyal adherence of the subscribers to the Bible and to "the scientific rule of metaphysical healing through His (God's) selected messenger, Mary Baker Eddy, and which she has given to the world in a book named 'Science and Health, with Key to the Scriptures.' But that the charging of $3 for 'Science and Health' when it can be printed and sold for 50 cents per copy is wrong in principle, and in effect shuts the door of this beautiful truth upon the poor by thus placing a prohibitive price upon it." The preamble also states that the compensation for class instruction should be $10, where the "religious trust" charges $100. In the matter of healing, it says $1 ought not to be an excessive charge for treatment. The hope is expressed that Mrs. Eddy will consent to selling the cheaper "Science and Health" for 50 cents, "but if she does not, the truth will be given." The dilemma which

the new sect presents to Mrs. Eddy is this: If—as the reformers say they believe as earnestly as the trust—knowledge was given her by God for the benefit of mankind, she has no moral right to chain it under the law of copyright; if, on the other hand, there is no inspiration in it, "then of course she legally and morally has the right to make money out of it; but she has no right to pose this knowledge before the world as the second coming of the Christ, Truth." It is said that Mrs. Eddy has taught over 4000 students, and that less than 300 of these are loyal to the "Religious Trust Church," and further that Mrs. Eddy has guided herself into wealth by the sale of her book.

Gelatin in Hemorrhagic Purpura.—Costinesco of Bucharest has been the first to extend to hemorrhagic purpura the gelatin treatment that has proved successful in aneurysms. He concludes from his success in seven cases treated with one or two injections of 2 per cent. gelatinised serum (40 to 200 c.c.) that its hemostatic effect in this affection is reliable and definite. No rise in the temperature follows, but the injections are slightly painful, absorption not being complete for one to three hours. In his communication to *Arch. Orientales*, September, he attributes the vasodilatation to toxemia and the hemorrhagic tendency to the fact that the blood-clot is less retractile than normal. This tendency is neutralized by the gelatin, which he has also found successful in the treatment of simple and rebellious epistaxis, serious dysenteriform enteritis, etc.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., from September 14 to and including Sept. 28, 1899:

James Albert Alexander, acting asst.-surgeon, from Washington, D. C., to duty at Land's End, Port Royal, S. C.

William J. Boyd, acting asst.-surgeon, from Fort Leavenworth, Kan., to duty at Fort Riley, Kan.

Alfred E. Bradley, major and surgeon, Vols., previous orders honorably discharging him from volunteer service revoked; relieved from Fort Yellowstone, Wyo., and assigned temporarily as chief surgeon of the Department of Dakota and attending surgeon, St. Paul, Minn.

Ira C. Brown, major and surgeon, Vols., sick leave of absence extended.

Julian M. Cabell, major and surgeon, Vols., (captain U. S. A., retired) honorably discharged from volunteer service on tender of his resignation, to take effect Oct. 1, 1899.

Christopher C. Collins, lieutenant and asst.-surgeon, U. S. A., from San Juan, Porto Rico to duty at Madison Barracks, N. Y.

Amasa S. Condon, acting asst.-surgeon, from Fort Bayard, N. M., to Ogden, Utah, for annulment of contract.

Charles F. Craig, acting asst.-surgeon, from temporary duty at Fort Hamilton, N. Y., to the Department of California.

Louis W. Crampton, major and surgeon U. S. A., from Fort McHenry, Md., to the Department of California.

Thomas E. Evins, major and surgeon, Vols., previous orders amended so as to assign Thomas E. Evins, instead of Thomas E. Evans, as surgeon 49th Inf. Vols.

Charles L. Furbush, captain and asst.-surgeon 44th Inf. Vols., from New York City to join his regiment at Fort Leavenworth, Kan.

Louis L. Gilman, acting asst.-surgeon, from Fort Hancock, N. J., to duty with the army transport service.

Stephen M. Gonzalez, acting ass.-surgeon, from Pensacola, Fla., to New York City for duty in the Department of the East, on the conclusion of which he will proceed to Porto Rico for duty.

Evan P. Howell, acting asst.-surgeon, from Land's End, Port Royal, S. C., to the general hospital at San Francisco, Cal.

Frank R. Keefer, captain and asst.-surgeon U. S. A., now in the Philippines, is relieved from further station and duty at Fort Walla-Walla, Wash.

J. Stebbins King, acting asst.-surgeon, from Fort Hamilton, N. Y., to Decatur, Ill., for annulment of contract.

Thomas J. Kirkpatrick, Jr., lieutenant and asst.-surgeon U. S. A., now on sick leave at San Francisco, Cal., is relieved from duty in the Department of the Pacific and assigned to Fort Myer, Va.

Homer C. Moses, acting asst.-surgeon, previous orders amended so as to place him on temporary duty at Fort Snelling, Minn., after which he will accompany the 45th Inf. Vols., to the Philippine Islands.

George J. Newgarden, captain and asst.-surgeon, U. S. A., previous orders revoked; he is relieved from duty at Fort Adams, R. I., and assigned to Fort McHenry, Md.

James E. Pilcher, captain and asst.-surgeon, to proceed to his home to await orders resultant from his examination by an army retiring board.

Adrian S. Polhemus, captain and asst.-surgeon, U. S. A., leave of absence extended.

Elias H. Porter, acting asst.-surgeon, from awaiting orders in New York City to duty at Fort Hancock, N. J.

George D. Romsay, acting asst.-surgeon, from Fort Hamilton, N. Y., to duty at Fort Adams, R. I.

Edward A. Romig, captain and asst.-surgeon, 40th Inf. Vols., leave of absence granted.

Lewis J. Strueber, lieutenant and asst. surgeon Vols., appointed August 17, 1899, and assigned to the 42d Inf. Vols., at Fort Niagara, N. Y.

Blair D. Taylor, major and surgeon, U. S. A., relieved from further duty at Fort McPherson, Ga., and assigned to the Department of California.

Henry D. Thomason, major and surgeon, Vols., from New York City to the Department of California.

Henry R. Tilton, lieutenant-colonel and deputy surgeon-general, U. S. A., leave of absence granted.

Wilfrid Turnbull, major and surgeon, Vols., from New York City to the Department of California.

William C. Warmsley, appointed lieutenant and asst.-surgeon, Vols., Sept. 9, 1899, and assigned to the 49th Inf. Vol., at Jefferson Barracks, Mo.

Dudley W. Welch, lieutenant and asst.-surgeon, 43d Inf. Vols., from New York City to join his regiment at Fort Ethan Allen, Vt.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Oct. 30, 1899:

Asst.-Surgeon F. B. Hancock detached from the *Eagle*, and when relieved, ordered home to wait orders.

Asst.-Surgeon C. A. Crawford, detached from the *Massachusetts* and ordered to the *Eagle*.

P. A. Surgeon R. S. Blakeman, promoted to passed assistant-surgeon from May 27, 1899.

Pharmacist L. G. Lous, retired from September 30.

Pharmacist E. Eagling, ordered to the naval hospital, Yokohama, Japan, immediately.

Medical Director M. C. Drennan, detached from the naval recruiting rendezvous, Philadelphia, Pa., and ordered to Washington, D. C., October 11, for examination for retirement, and then home and to wait orders.

Asst.-Surgeon E. J. Grow, detached from the *New Orleans* and ordered to the *Massachusetts* immediately.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Oct. 7, 1899:

SMALLPOX—UNITED STATES.

Massachusetts: Chelsea, September 23 to 30, 3 cases; Everett, September 23 to 30, 1 case.
Michigan: Battle Creek, September 16 to 23, present; Maple Grove, September 16 to 23, present.
Ohio: Cincinnati, September 22 to 29, 1 case; Dayton, September 23 to 30, 1 case.
Virginia: Portsmouth, September 23 to 30, 1 case.
Washington: Seattle, September 16 to 23, 2 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, September 9 to 16, 2 cases.
Germany: Dusseldorf, September 2 to 9, 1 case.
Greece: Athens, September 9 to 16, 15 cases, 2 deaths.
India: Bombay, August 29 to September 5, 1 death.
Mexico: Chihuahua, September 16 to 23, 2 deaths; Mexico, September 2 to 17, 6 cases, 6 deaths.
Russia: Moscow, September 2 to 9, 1 death; St. Petersburg, September 2 to 9, 2 cases, 1 death; Warsaw, September 9 to 16, 1 death.
Straits Settlements: Singapore, August 12 to 19, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Key West, September 29 to October 5, 232 cases, 8 deaths.
Louisiana: New Orleans, September 23 to October 4, 18 cases, 2 deaths; to date, 33 cases, 10 deaths.
Mississippi: Centreville, September 29, 2 cases; Jackson, October 2, 12 cases, 4 deaths; Mississippi City, September 29, from outbreak, 26 cases, 1 death.

YELLOW FEVER—FOREIGN.

Colombia: Barranquilla, September 9 to 16, 1 case, 1 death; Panama, September 5 to 19, 7 cases.
Cuba: Havana, September 15 to 22, 10 cases, 4 deaths; Santiago, September 9 to 16, 3 cases, 1 death.
Mexico: Tuxpan, September 11 to 25, 11 deaths; Vera Cruz, September 21 to 28, 4 deaths.

CHOLERA.

India: Calcutta, August 19 to 26, 5 deaths; Madras, August 26 to September 1, 1 death.

PLAGUE.

Africa: Magunde, Delagoa Bay, September 22, present.
China: Niuchwang, September 12, sporadic, 5 to 10 deaths daily.
Egypt: Alexandria, September 3 to 10, 2 cases.
India: Bombay, August 29 to September 5, 96 deaths; Calcutta, August 19 to 26, 42 deaths.
Russia: Koloborka, Government of Astrachan, July 16 to August 12, 24 cases, 23 deaths suspected.

CHANGE OF ADDRESS.

Barnett, T. M., from Verbena, Ala. to 210 E. 16th St., New York City.
Burkholder, C. E., from Delphi, Ind. to Moberly, Mo.
Bacharach, H., from Faribault, Minn. to Finley, N. D.
Egbert, T. H., from Beelerton to Clinton, Ky.
Gallow, W. F., from Toronto to Elgin St., Goderich, Ont.
Hyde, E. E., to 100 Laflin St., Chicago.
Holden, W. B., from Battle Creek, Mich. to 28 33d Place, Chicago.
Heise, W. F. C., to 3d and Walnut Sts., Winona, Minn.
Johnson, P. B., from Norfolk, Neb. to 644 W. Harrison St., Chicago.
Jones, H. G., from Van Wert, O. to 42 Laflin St., Chicago.
Kurtz, C. J., from Flint, Mich. to 802 E. 47th St., Chicago.
Louis, J., from 157 W. 123d St. to 780 Park Ave, New York City.
McMurray, O. M., from 322 S. Wood St. to 1355 Wabash Ave, Chicago.
Miller, E. C., from Rockwell, Ia. to Brooklings, S. D.
North, T. L., from Greenville to German, Ohio.
Neilson, T. R., from Cape May, N. J. to N.W. Cor. 17th and Sansom Sts., Philadelphia, Pa.
Regar, H. K., from 1509 to 1909 N. 13th St., Philadelphia, Pa.
Sherwood, F. R., from 70 E. Madison to 100 State St., Chicago.
Seton, W. H., from 27 W. 84th to 168 W. 96th St., New York City.
Vaden, W. E., from Triune to Rich Creek, Tenn.
Wright, S. J., from Tallmage to Akron, Ohio.
Williams, R., from Carthage to 535 Washington Boul., Chicago.